148

GHANA GOVERNMENT

REPORT

OF THE

MINISTRY OF HEALTH

1955

BUREAU OF HYGIENE & TROPICAL DISEASES
13 MAR 1959

C

Printed and published by the Government Printer, Accra. To be purchased from the Government Printing Department (Publications Branch), Accra, Ghana, and from the Crown Agents for Oversea Governments and Administrations,
4 Millbank, London, S.W.1.

1959

PRICE — FIVE SHILLINGS

22501293677

REPORT OF THE

MINISTRY OF HEALTH

1955

PRINTED BY THE GOVERNMENT PRINTER, ACCRA, GHANA

1959

WELLCOME INSTITUTE
LIBRARY
Coll. welMOmec
Call
No. Ann Rep
WA28
.H66
G61
1955

REPORT OF THE MINISTRY OF HEALTH

Part I

General Summary of
Administration and Development
for the year 1955

FOREWORD

The Report of the Ministry of Health for the calender year 1955 follows the lines of the Report for 1954. Part I gives a general summary of administration and development during the year under review and Part II contains a detailed report of the Chief Medical Officer.

IMORU EGALA, M.L.A.
Minister of Health.

D. M. ALLEN,
Permanent Secretary.

Digitized by the Internet Archive
in 2019 with funding from
Wellcome Library

https://archive.org/details/b31478190

General Summary of Administration and Development

I—ADMINISTRATION

The Ministry of Health, incorporating the former Medical Department (with which it was merged in 1953), is responsible for advising on the formulation of government policy and its execution in the field of health, for the administration of health services maintained by the Central Government, for supervision and guidance of health services maintained by local authorities and bodies receiving financial assistance from the Central Government and for the promotion of improved health standards throughout the country.

At the headquarters the Permanent Secretary is responsible to the Minister for all administrative aspects of the Ministry's responsibilities and functions. The Chief Medical Officer, of equal rank and status with the Permanent Secretary and also having direct access to the Minister, is the chief adviser to all Ministries and Departments on technical and professional matters concerning health, and is also chairman of such statutory bodies as the Nurses Board, the Midwives Board and the Pharmacy and Poisons Board. Both the Permanent Secretary and the Chief Medical Officer have appropriate staff to carry out their functions and these staffs collaborate at all levels.

The Deputy Chief Medical Officer is stationed at headquarters and there are Principal Medical Officers at headquarters and at regional headquarters in Accra, Cape Coast, Kumasi and Tamale in charge of health services in their respective regions. The Principal Medical Officer in Accra is responsible not only for health services in Accra but also in the Eastern Region and Trans-Volta/Togoland.

Due to shortage of staff, it was not found possible to post a Senior Medical Officer to Ho to administer the medical services in Trans-Volta/Togoland.

The Central Medical Stores at Takoradi and the Regional Medical Stores at Accra continued in operation, and further progress was made in the re-organisation of the medical stores system by the opening of a new Regional Medical Stores at Kumasi, to serve Ashanti and the Northern Territories. In addition work commenced towards the end of the year on the Medical Stores sited on Tamale which will eventually serve the Northern Territories.

The Ministry of Health continued to be closely associated with the Preparatory Commission in examining health aspects of the Volta River Project.

Conferences of Principal Medical Officers with headquarters staff were held at Accra on both administrative and professional matters. These conferences were attended, where appropriate, by medical specialists and proved of value in summing up past progress, and formulating policy for the future.

II—STAFF AND SERVICES

The numbers of the main categories of medical and health staff are set out in Appendix A. There were a number of changes in the holders of senior posts arising from retirement and replacement. It is noteworthy to record that medical practitioners of Gold Coast birth were appointed to the substantive posts of Chief Medical Officer and Deputy Chief Medical Officer.

Child welfare clinics and antenatal maternity services are maintained by the Central Government, Local Authorities and voluntary agencies such as Missions and by the Gold Coast Branch of the British Red Cross Society; the last named operates such services at Accra, Sekondi, Kumasi, Cape Coast and Koforidua (all static) and a few mobile clinics are operated in various parts of the country. Discussions took place with officials of UNICEF with a view to extending the provision of material aid in the field of maternal and child health and in the prosecution of mass campaigns against yaws and leprosy.

Laboratory services are provided at all government hospitals. The central laboratory is situated at the Medical Research Institute, Korle Bu, Accra.

Medical Field Units, with their main headquarters at Kintampo in Ashanti, conduct campaigns against trypanosomiasis and yaws and epidemics as they may occur, e.g. cerebro-spinal meningitis and smallpox. Concurrently the Units conduct surveys of the incidence of disease in rural areas, promote health education and adminster treatment at permanent treatment centres. Their activities at present are largely directed towards improving conditions in the Northern Territories including Northern Togoland, Ashanti, and Trans-Volta/Togoland where the needs are greatest; it is intended that they should be developed to cover rural areas throughout the country.

The programme of construction of new hospitals and other projects, and improvement of existing institutions, showed further progress in 1955. The Kumasi Central Hospital was completed, and three ward-blocks with a bed state of 295 are now in use. The new out-patient department at Sekondi was completed at the end of the year, and at Cape Coast Hospital a new children's ward, male private ward and maternity ward were on the verge of completion. The hospitals at Yendi, Wa, Navrongo and Mpraeso were completed, and work commenced on a 60 bed hospital at Worawora to be run by the Evangelical Presbyterian Church. A 25 bed maternity hospital was completed at Mampong, and is being run by the English Church Mission. Work continued on the extensions to the Gold Coast Hospital at Korle Bu, and to the sewage plant and other works at the Accra Mental Hospital. Following the opening of health centres at Kpandu, Asokori-Effiduasi and Bimbilla during 1954, work commenced in 1955 on new health centres at Tumu and Bole as a start to the construction programme of 43 such centres recommended by the Commission of Enquiry into the Health Needs of the Gold Coast. It is expected that, with the funds and working capacity available, about six to eight health centres may be built every year.

The leper settlement and leprosy service headquarters at Ankaful, built with Colonial Development and Welfare funds was completed in 1955, and by the end of the year substantial progress had been made in the construction of the leper settlement at Kokofu in Ashanti. This settlement is to be run by the Catholic Mission on behalf of Government, which will provide the necessary financial assistance. At the leper settlement at Ho, in Trans-Volta/Togoland, work was nearly complete on a programme for rehousing 100 patients.

The work of the Tuberculosis Specialist was continued during the year, and community surveys in selected areas were carried out. Plans were formulated for the opening of a Tuberculosis Research Centre based on the Kumasi Central Hospital, and staffed by a doctor and nursing sister specially trained for such work. This Centre will be an official unit of the West African Council for Medical Research, working in co-operation with the Ministry of Health.

In the field of voluntary work, the Gold Coast Society for the Prevention of Tuberculosis was set up, under the patronage of the Prime Minister, and the Tuberculosis Specialist was appointed to the committee of the Society

Additional laboratory equipment was ordered and put to use at the Medical Research Institute and in hospital laboratories throughout the country. The blood bank in Accra continued its good work and equipment for blood transfusion services was ordered for the Kumasi and Sekondi Hospitals. Further X-Ray plants were ordered for use in selected district hospitals and arrangements were made for installation of generating and X-Ray plants at Keta, Ho and Jirapa.

The government dental services are manned entirely by Gold Coast personnel, these officers, eight in number, including one Gold Coast lady Dental Surgeon, all qualified in the United Kingdom. Static dental clinics are in operation at Accra, Sekondi, Kumasi and Tamale, and a mobile dental clinic continued to operate in parts of the Eastern and Western Regions and in Trans-Volta/Togoland. Towards the end of the year Professor R. W. Bradlaw, Dean of the Dental Faculty at Durham University visited the country to advise on the re-organisation of the dental service.

During the year it was found possible to complete the provision of ambulances for all government hospitals, and a number of replacements were made for vehicles damaged in accidents or outworn with age.

Local Authorities, especially in Ashanti, continued to expand the provision of dressing stations and maternity homes. There is need for closer control of these, and also private institutions, and this is engaging the attention of the Ministry in the interest of improving services and reducing abuses.

In recent years it had been recognised that the basic necessity of improved environmental hygiene and the responsibilities of local authorities in this regard had been inadequately recognised. As a result of discussions and improved liaison between the Ministry of Health and the Department of Social Welfare and Community Development an effective start to the health education programme was provided by jointly organised health education campaigns dealing with such fundamentals as the necessity for adequate village latrines and proper water supplies. Great importance is attached to these campaigns, which can do much to raise the standards of hygiene and living in the rural areas. It has to be recognised however that many local authorities are not yet able to provide the range of health services which are properly their responsibility. It was found possible during the year to make arrangements for the transfer of responsibility for sanitary services in the Sekondi/Takoradi area from Government to the Municipal Council, based on a system of diminishing yearly financial grants until such time as the Council could be expected to assume full financial responsibility.

The participation of Missions in medical work continues to expand and is encouraged as a policy of government where government itself is unable to provide the facilities required and insofar as the funds available for financial assistance permit. Mention has been made previously of the 48 bed hospital at Mpraeso, to be operated by the Seventh Day Adventist Mission, and the hospitals at Navrongo, Worawora and Mampong, each operated by Mission bodies. Grants were made to the Methodist Mission for medical work at Wenchi in the Ashanti Region, the Basel Mission for training of staff at Agogo also in the Ashanti Region, the Salvation Army at Begoro in the Eastern Region and various Roman Catholic Missions operating clinics in the Western and Eastern Regions and at Jirapa and Damongo in the Northern Territories.

III—TRAINING OF STAFF

Plans for the co-ordination and intensification of training schemes were helped forward by the appointment during the year to the headquarters staff of a Gold Coast man in the post of Training Officer. Training of pupil health inspectors for the R.S.I. qualification and refresher courses for older men continued at the School of Hygiene in Accra. The training is designed for the requirements of sanitation in municipalities and for the more responsible supervisory posts. Training also continued at the schools in Kitampo and Tamale where the emphasis is primarily directed to a less advanced type of training which is adequate for the staffs of local authorities in the smaller urban and in rural areas.

The Pharmacy Department of the Kumasi College of Technology trains students for the examinations of the Pharmacy and Poisons Board. Advanced training for the membership of the Pharmaceutical Society of the United Kingdom is at present obtained overseas.

The training of an adequate number of qualified nurses is of primary importance to the expansion of medical facilities throughout the country, and two categories of training by Government are provided, the one at the Nurses Training College, Accra for the more advanced qualification of State Registered Nurse and the other at a number of training hospitals for that of Qualified Registered Nurse. In addition, missions, mines and industry train pupils for the examinations of the Gold Coast Nurses Board for the Q.R.N. qualification.

Midwifery training continues to be provided at the school attached to the Maternity Hospital in Accra for those who have already obtained nursing qualifications and at the school in Kumasi for those who have had no other training.

The training of pupils in mental nursing continued to be handicapped by the lack of tutors. A number of local nurses are in consequence being trained in the United Kingdom as Registered Mental Nurses.

The courses for X-Ray Assistants at the Gold Coast Hospital and for Laboratory Assistants at the Medical Research Institute were carried out on the same lines as in previous years.

IV—RESEARCH

The annual meeting of the West African Council for Medical Research was held in Freetown in March, and was preceded by a meeting of the Council's Scientific Committee. It was attended by representatives from the United Kingdom as well as the West African Territories. Agreement was reached on a number of matters of joint interest to the British West African Governments in the field of future development, and the continued re-organisation of previously existing research facilities.

Medical research is carried out in the Gold Coast at the Medical Research Institue in Accra and in the field, especially in conjuction with the Medical Field Units. At the Institute, research has included a wide variety of subjects, and has included investigation in the sickle-cell trait and sickle-cell anaemia, typhus and typhoid fevers, etc. These investigations have been recorded in a number of scientific papers published by members of the staff.

REPORT OF THE MINISTRY OF HEALTH

Part II

REPORT

of the

Chief Medical Officer

on the

State of the Public Health during 1955

CONTENTS

Page

INTRODUCTION 15

I. Vital Statistics 17

II. A—General Epidemiology 19
  - Tuberculosis 19
  - Venereal Diseases 19
  - Enteric Group of Fevers 20
  - The Dysenteries 20
  - Diphtheria 20
  - Whooping Cough 20
  - Meningococal infections 20
  - Acute poliomyelitis 20
  - Smallpox 21
  - Yellow Fever 21
  - Infectious Hepatitis 21
  - Rabies 21
  - Yaws 21
  - Trypanosomiasis 21

B.—Other important Diseases 21
  - Blackwater Fever 21
  - Schistosomiasis 21
  - Onchocerciasis 22
  - Hookworm 22
  - Tapeworm 22
  - Guinea worm 22
  - Non-toxic Goitre 22
  - Deficiency States 23

III. General Hospital Services 24
  - Work done in Hospitals 24
  - Utilisation of Hospital beds 24
  - New Hospitals 24
  - Hospital Extensions and Alterations 24

IV. General Public Health 25
  - General Comments 25
  - Mosquito Control 25
  - General Sanitation 25
  - Preventable Illness 26
  - Nutrition 26
  - Food Hygiene 26
  - School Medical Service 26
  - Special Clinics 26
  - Prisons 26
  - Port Health 27

V. The Medical Field Units 28
  - Introduction 28
  - Organisation 28
  - Functions of Medical Field Units 28
  - Training 28
  - Areas Surveyed and Work Done 29

Endemic Diseases 31
  - Trypanosomiasis 31
  - Yaws 31
  - Leprosy 32
  - Onchocerciasis 32
  - Guinea worm 33
  - Bilharzia 33
  - Malaria 33

Vaccination 34

Epidemics 34

CONTENTS—*contd.*

PAGE

VI. The Laboratory Service .. 35
VII. The Government Chemical Laboratory .. 37
VIII. The Tuberculosis Service .. 38
IX. X-ray Services .. 39
X. The Specialist Anaesthetist's Department .. 41
XI. The Mental Hospital .. 42
XII. The Ear, Nose and Throat Department .. 45
XIII. The Ophthalmic Department .. 46
XIV. Maternal and Child Welfare Services .. 47
  Maternal Care .. 47
  Child Welfare .. 48
XV. Training of Auxiliary Medical Personnel .. 51
  State Registered Nurses .. 51
  Qualified Registered Nurses .. 51
  Mental Nurses .. 51
  Midwives .. 51
  General Comments on Nursing Position .. 51
  Health Inspectors .. 51
  Health Visitors .. 52
  X-ray and Laboratory Assistants .. 52
XVI. Statutory Boards .. 53
  The Pharmacy and Poisons Board .. 53
  The Nurses Board .. 53
  The Midwives Board .. 53

APPENDICES

A Visitors to the Ministry of Health .. 53
B Special Contributors to the Annual Report .. 54
C Tables to Chapter I .. 54
D Tables to Chapter III .. 64
E Tables to Chapter IV .. 65
F Tables to Chapter VI .. 66
G Tables to Chapter XIV .. 67
H Tables to Chapter XV .. 70
J Consolidated Returns of all Hospitals .. 72

THE REPORT OF THE CHIEF MEDICAL OFFICER ON THE STATE OF THE PUBLIC HEALTH FOR THE YEAR ENDED 31st DECEMBER, 1955

INTRODUCTION

To THE HONOURABLE IMORU EGALA, M.L.A.
MINISTER OF HEALTH

Sir,

I have the honour to submit a report on the state of the public health in the Gold Coast for the year 1955, together with an account of the work of the professional and technical services of the Ministry for the same period.

The year 1955 saw the beiginning of the effects of the constitutional changes in the Gold Coast upon the health service. The Chief Medical Officer, his Deputy and all the Principal and Senior Medical Officers of overseas origin proceeded on leave prior to retirement during the year. Other officers who retired from the service during the same period included the Principal Matron, the Specialist Epidemiologist in charge of the Medical Field Units and one Specialist Pathologist. The development of the malaria control service also had to come to a stand still because of the retirement of the Medical Officer of Health in charge of the project. The usual shortage of full time medical staff on public health work was felt more keenly than ever, especially because of the extensive changes which took place at the topmost posts in the public health service. That the health service withstood this sudden jolt with no serious untoward effects is a credit to the fortitude and good sense of those who held their posts and did their duty. It must be made clear however that the forward outlook expected on the part of a progressive health department requires trained public health administrators.

Vital Statistics are dealt with in Chapter I of the report. The last census was taken in 1948, so that population figures as estimated for 1955 may possess a significant error. Details in respect of registration of births and deaths apply only to certain areas of the country where these facilities are provided and are not themselves free from error. The information therefore given in this chapter must be interpreted in the light of these factors. It is not very reliable but by publishing it and pointing out the factors influencing it, steps may be taken by the appropriate authorities to improve the situation.

Chapter II provides information on the incidence of the more important communicable diseases in the country. The prevalence of typhoid and paratyphoid fevers even in municipalities such as Accra only serves to remind us that we cannot in any way afford to be complacent about the public health. A few cases of yellow fever were reported from Kintampo. This was not a typical outbreak of urban yellow fever. The incident appears to have been associated with the construction of the new road northwards from Kintampo and the opening up of that part of the county. The services of the Virus Research Institute of the West African Council for Medical Research were utilised but no conclusive evidence was produced to indicate that the outbreak was one of jungle yellow fever.

The scope and the extent to which the hospital services were used during the year are dealt with in Chapter III. Substantial progress has been made in the programme of providing new hospitals.

Chapter IV deals with general public health including environmental sanitation. The matter of greatest concern in this chapter is the belated development of water-borne sewerage in the rapidly growing municipalities. The architecture of these towns is changing. Several multi-storeyed buildings are in evidence everywhere on the main streets of Accra and Kumasi and yet the method of disposal of night soil is at its best only semi-rural. These evidences of poor co-ordination of the public health services are laying down the foundation for a repetition of the conditions which confronted the cities of Europe a hundred years ago in the wake of the industrial revolution.

Chapter V deals with the report of the Medical Field Units, Chapter VI the Laboratory Service, and Chapter VII the Government Chemical Laboratory. These chapters are fully reported and were compiled by the Specialist Officers in charge of these organisations. The Medical Field Units probably went through the most critical period in its history during the year under review. The work of the organisation is now greatly expanded and the establishment of technicians has increased, but medical leadership is still weak owing to inadequate numbers of doctors. There is no doubt that for many years to come this mobile organisation must remain the mainstay of the public health service in the rural areas.

Chapters VIII to XIII are the reports of the Tuberculosis Specialist, The Specialist Radiologist Specalist Anaesthetist, Specialist Psychiatrist, Ear Nose and Throat Specialist, and the Ophthalmic Speciallist. The extension of radiological services is forging ahead, but the need for additional Radiologists requires to be more fully appreciated. The problem of overcrowding at the Mental Hospital in Accra still remains unsolved because of lack of funds. One solitary tuberculosis officer cannot be expected to deal adequately with the problem of tuberculosis throughout the length and breadth of the Gold Coast.

Chapter XIV gives an account of the Maternity and Child Welfare Services in the country including a report on the Health Visiting Service. Chapter XV gives information on the training of auxiliary medical personnel, both locally and overseas, and Chapter XVI details the activities of the Statutory Boards concerned with the discipline and professional regulation of para-medical auxiliaries.

It now remains for me to record my gratitude to the many individuals and organisations who have contributed to the compilation of this report. The medical staff in charge of Government stations and services as usual contributed the bulk of the material. Some of the doctors working with missions and with mining companies and industrial concerns contributed in no small measure. To all these, grateful thanks must be expessed. Special mention should be made of the Registrar-General and the Government Statistician who gave so freely of their services which were warmly received with grateful thanks.

The names of specialist officers who contributed to the report are recorded in Appendix B. The administrative machinery for dealing with personnel matters such as those which confronted the Ministry of Health during the period covered by this report was such that between the welter of June–July–August, 1955 and the completion of this report no less than five officers the majority with no previous experience whatsoever had to hold the post of Principal Medical Officer, Headquarters. The editing of this report is the work of Drs. Nugent and Warmann. I concur with the views expressed in the report and remain responsible for the whole.

I have the honour to be,
Sir,
Your obedient servant,

E. AKWEI.
Chief Medical Officer.

CHAPTER I

VITAL STATISTICS

General

The estimated population of the Gold Coast at the middle of 1955 was 4,670,000. This represents an increase of 84,000 on the previous year. It is seven years since the last census was done and the next one, due in 1958, is awaited with interest. It has been often mentioned before that a five year period would be better for census purposes and the opportunity is taken of repeating it here. With the country developing so rapidly it is more important than ever that accurate figures in respect of population should be available.

Non-African Population

Details regarding the non-African population are shown in Table I. The total for the year was 14,080, the corresponding figure for 1954 being 12,715. The bulk of this increase was accounted for by the Syrian/ Lebanese community. There were minor increases in each of the other communities. The British with 9,520 form the main group resident in the country.

Table II gives the details regarding employment in the main occupations of the non-African population.

Registration of Births and Deaths

There are 36 registration areas in the country. This is the same figure as we had in 1954. No extension of direct registration by the Registrar-General took place but several Local Authorities made bye-laws for the registration of births and deaths under the Local Government Ordinance bringing the total of Local Authorities providing such facilities to 38. The Registrar-General supervised the Local Authorities.

Table III shows the registration of births and deaths by regions for the year. The Eastern and Western Regions have most of the registration areas and it is therefore natural that the highest figures should be recorded in these regions. The explanation for the majority of the registration areas being in the south is that registration originally commenced here and then gradually spread northward. Table IV sets out the total numbers of registered births and deaths by sex and racial origin. In 1954 there were 19,317 African births, in 1955, 22,162. Non-Africans showed an increase in 1955 over the previous year.

Table V records the birth, stillbirth, death and infantile mortality rates for the year under review. Table VI shows the details by regions. The table below shows figures for comparison over the last five years:—

Year	Live birth rate	Still birth rate	Death rate	Infant mortality rate
1951	31·5	85·6	19·3	117
1952	30·3	78·0	20·3	125
1953	35·3	73·0	20·8	113
1954	37·4	78·0	21·1	119
1955	42·0	70·0	21·8	109

It must be repeated that these figures refer only to the registration areas, and not to the entire country. However, examination of these figures shows a steadily increasing birth rate, a slightly reduced still birth and infant mortality rates and a fairly static death rate. The still birth rate is a reflection on the use of the ante-natal and maternity services provided and though the figure is high it is gratifying to note that the trend is downwards. The birth rate has exceeded the death rate yearly for the past five years and this must be the greatest single factor in the steady increase in population. The infant mortality rate is high and though it is coming down slowly there is no place for complacency. An examination of Table VII which sets out the number of registered deaths by age and sex shows that the largest number of deaths occurred in the under 1 year, 1–5 years and 25–45 years age-groups with little difference between them. A reduction in the deaths under one year (infant mortality) and in the 1–5 years age-groups will be achieved mainly by education of the public. One of the best means of doing this is through an efficient health visiting service. There is no prospect of this at the moment for many reasons, the main one being an inadequate appreciation of the value of this service which is reflected in the remuneration offered.

Invalidings of Special Groups of Population

(*a*) *European Officials*

The table below shows the population of European government officials for the past five years together with the number invalided and number of deaths:—

	1951	1952	1953	1954	1955
Number resident	1,411	1,581	1,691	2,083	2,300
Number invalided	16	25	17	15	10
Number of deaths	3	3	4	3	3

There has been a steady decline in the number of invalidings in spite of the gradual increase in the number resident. Details regarding the causes of invalidings are shown in Table VIII. For the year under review there is nothing specially worthy of comment. Over the last five years (Table IX) the main causes of invaliding have been psychoneuroses and disorders of personality.

(*b*) *African Officials*

Fifty-six officials were invalided during the year. The causes of invaliding are indicated in Table X. The only noteworthy point is that mental illness is more common than any other condition. Table XI gives the main causes of invalidings over the last five years.

MORTALITY

Table XII lists the classified twelve principal causes of mortality in Gold Coast hospitals during 1955 in order of importance. Malaria (all types) once again took first place with 222 deaths closely followed by other complications of pregnancy, childbirth and puerperium ' with 220 deaths. The third greatest cause of death was ' motor vehicle accidents.' Examination of the table reveals that tetanus occupies a high place and so also does ' intestinal obstruction and hernia '.

Deaths in special groups of the population

(*a*) *European officials.*—There were only three deaths in 1955. Causes of death were (i) injuries of pelvis and simple fracture of bones, (ii) compound fracture of skull and subdural haematoma of right side with compression of brain and (iii) cerebral haemorrhage.

(*b*) *European non-officials.*—There were 34 deaths in this group. Over half of these (21) were in children. Table XIII sets out the details in respect of these deaths. There appears to have been somewhat high incidence of deaths due to heart disease in children. Amongst the adults, motor accidents have again taken their toll.

(*c*) *African officials.*—Table XIV gives the classified causes of death for the past year and Table XV gives the details for the past five years.

Maternal Mortality Rate

The number of maternal deaths registered in 1955 was 409 giving a maternal death rate of 17 per thousand. Details for the past five years are as follows:—

Year	Maternal deaths registered	Maternal mortality per 1,000 total births
1951	397	23·1
1952	315	18·0
1953	372	19·0
1954	439	21·0
1955	409	17·0

There is a slight reduction in the figure for the year under review and it is to be hoped that this downward trend will be maintained.

NOTIFIABLE INFECTIOUS DISEASES

Table XVI indicates the return of notifiable infectious diseases. Notification is not satisfactory. Government medical officers sometimes fail to report cases and private general practitioners as a rule only report deaths. Efforts are once again being made to instruct government medical officers to notify these diseases without delay and the co-operation of the private practitioners is being solicited.

The various diseases reported are discussed in the next chapter.

MORBIDITY

The details shown in Return 'A', Consolidated Return for Hospitals, at the end of the report refer to government hospitals only, and it is considered that these morbidity returns are reasonably accurate.

The most important cause of morbidity was again malaria. Second was ' complications of pregnancy, childbirth and the puerperium ' and in third place was ' motor vehicle accidents '. Details of the fifteen major causes of morbidity are shown in Table XVII.

CHAPTER II

A—GENERAL EPIDEMIOLOGY

Tuberculosis

(*a*) *Respiratory*

It will be seen in the consolidated return for hospitals, (Return "A"), that during 1955 there were 749 cases admitted to the various hospitals. In 1954 there were 1,077 cases. Figures in respect of out-patients are 1,169 for 1955 and 2,426 for 1954. The 1955 figure is exclusive of 4,794 cases seen in clinics conducted by the Tuberculosis Specialist. Progress can only be made when funds and staff become available for the expansion of the tuberculosis service.

(*b*) *Non-Respiratory*

There were 273 admissions to hospitals with tuberculosis of parts of the body other than the lungs. Of these, 36 died. As out-patients, there were only 150 cases. Tuberculosis of the bones and joints had the highest figures for any single group.

Venereal Diseases

(*a*) *Syphilis*

The figures for the last 3 years are as follows:—

Year	In-patients	Out-patients
1953	106	1,748
1954	185	1,586
1955	162	877

These figures include cases classified as congenital, early syphilis, tabes dorsalis, general paralysis of the insane and a general group designated " all other syphilis ". There appears to have been a large decrease in the numbers attending as out-patients. Examination of the figures reveals that this is due to a large drop in the group " all other syphilis ". This may be a real decease or alternatively it may be due to better laboratory facilities and diagnoses excluding conditions which were formerly placed in this group. The main centres from which these cases were reported were Dunkwa, Oda and Agogo for in-patients, and Takoradi, Nsawam, Cape Coast, Oda and Akuse for out-patients.

(*b*) *Gonorrhoea*

The following table sets out the figures for the last five years:—

Year	Males seeking treatment			Females seeking treatment			
	In-patients	Out-patients	Total	In-patients	Out-patients	Total	Grand Total
1951	—	—	10,235	—	—	2,713	12,948
1952	—	—	11,629	—	—	4,043	15,672
1953	583	14,056	14,639	358	2,379	2,737	17,376
1954	460	5,872	6,332	264	1,998	2,262	8,594
1955	357	10,097	10,454	159	1,598	1,757	12,211

In 1953, the rising incidence of gonorrhoea was commented upon. In 1954, there was a considerable drop in the total figures of cases treated and although the exact cause of this sudden drop could not be pin-pointed, it was suggested that the drop might have been due in part to the increase in the number of private practitioner clinics available to the general public and partly to the extensive use of penicillin in the treatment of yaws. Figures for the year under review have not however confirmed these conjectures and it would appear that the 1954 figures were not accurate, as there could not have been a 50 per cent drop in the figures for one year and a 50 per cent increase the following year. However excluding the 1954 figures for male out-patients there is a definite decrease in the number of cases seeking treatment, and it is hoped that this downward trend would continue. Unfortunately it has not yet been possible to organise a department to be responsible for the treatment of venereal disease as in the case of tuberculosis, and there is therefore no organisation for the follow up of contacts.

(*c*) *Lymphogranuloma venereum*

There was a slight increase in the incidence of this disease. In 1954 there were 210 cases of which 49 were admitted. In the year under review there were 484 cases of whom 45 were admitted.

(*d*) *Granuloma inguinale*

Only 96 cases attended hospitals with this disease of whom 34 were admitted. This was a decline from 1954 when there were 286 cases (76 admissions).

(*e*) *Other Venereal diseases*

This group includes all venereal conditions which do not fall into the previous four specific groups and as may be expected has the highest figure—324 admissions and 5,114 out-patients.

ENTERIC GROUP OF FEVERS

The rising incidence of these conditions over the past few years was continued in 1955. There were 520 admissions to hospital with typhoid fever and 81 with paratyphoid fever. Amongst these there were 40 and 5 deaths respectively. Combined figures for the past five years are as shown:—

Year	1951	1952	1953	1954	1955
Cases	423	334	382	622	601
Deaths	56	36	31	40	45

No major outbreaks were reported during the year although many cases continued to occur in all districts. The incidence of carriers in the community is unknown but ample opportunities exist for this group of people to spread these diseases due to the present standard of food hygiene in the country.

THE DYSENTERIES

It is not surprising in view of the generally poor sanitary standards prevailing throughout the country that the dysenteries again figured prominently in disease returns from most hospitals. It is however encouraging to note a slight decrease in the figures for 1955.

Out-patient attendances were lower than those for 1954. Comparative figures are as follows:—

Year	Bacillary Dysentery	Amoebic Dysentery	Unclassified Dysentery
1954	1,027	809	3,982
1955	986	524	2,468

In respect of hospital admissions also there was a decrease. *See* the Table below.

Year	BACILLARY DYSENTERY		AMOEBIC DYSENTERY		UNCLASSIFIED DYSENTERY	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
1951	612	29	680	30	493	10
1952	481	15	604	20	251	30
1953	507	27	531	24	779	61
1954	777	81	499	17	559	29
1955	476	32	331	18	336	18

DIPHTHERIA

There were two admissions to hospital, and 37 cases attended as out-patients. The reason for recording these cases in this annual report is to dispel the impression which appears to be general that this disease does not occur in this country.

WHOOPING COUGH

This disease is very common and large numbers of cases occur annually in the rural areas. Some of these cases reach hospital. In 1955 there were 191 admissions (9 deaths) and 1,426 out-patient attendances, but this gives no indication of the true incidence. It is not a notifiable disease and outbreaks are therefore not reported.

MENINGOCOCCAL INFECTIONS

There were no epidemics during 1955 but there was the usual number of cases occurring in widely scattered areas over the country. Admissions to hospital numbered 136 (45 deaths) and there were 33 out-patients.

ACUTE POLIOMYELITIS

There were 48 admissions to hospitals. Of these two died. It is now generally recognised that countries such as the Gold Coast which were formerly thought to be free from poliomyelitis in its paralytic form may actually be associated with a hyperendemicity of the disease.

Sporadic cases occur in this country every year. Poor reporting probably keeps the figure lower than it really is. So far there have been no epidemics.

SMALL POX

Small pox is endemic. From time to time epidemics of varying proportions occur. There was one minor outbreak during the year at Jakobu in the Bekwai district. This was rapidly dealt with by the Medical Officer of Health in charge of Ashanti.

Vaccination against small pox is carried out continuously and is performed by many different categories of staff such as Local Authority Health staff, Medical Field Units Staff, Government Health Inspectors and Vaccinators and other special staff gazetted from time to time as public vaccinators. A large number of vaccinations is thus carried out every year. In spite of this, small pox smoulders and then flares up from time to time. The price of freedom from small pox is a never ending vaccination campaign.

YELLOW FEVER

There were three confirmed cases admitted to hospital. Of these one died. In addition, at Kintampo, there was a little outbreak of jaundice which is more fully described in the chapter on the Medical Field Units. In this outbreak, four cases were confirmed as being yellow fever. One of these was confirmed serologically and the other three by liver biopsy after death.

INFECTIOUS HEPATITIS

There were 272 admissions (30 deaths) and 547 out-patients in 1955. The importance of this condition, apart from the seriousness of the disease, is the necessity to differentiate it from yellow fever. Without laboratory aid this is usually very difficult. In the Kintampo outbreak mentioned above only four cases were confirmed as being yellow fever. The other cases, some of whom were very ill, were classified as infectious hepatitis.

RABIES

There were 14 cases admitted to hospitals all over the country in 1955. In the larger towns like Accra, Kumasi, Takoradi and Tamale, facilities exit for prophylactic immunisation of dogs and many dog owners take advantage of this. Such dogs however from only a small proportion of the total dog population exposed to the risk of infection.

YAWS

The Medical Field Units have been conducting for some time now a campaign against yaws using long acting penincillin. This is described in the appropriate chapter. In addition, yaws is treated at all hospitals, dressing stations and health centres, and during the last year 24,585 cases were treated.

TRYPANOSOMIASIS

This is primarily the concern of the Medical Field Units. The condition is however also treated at district hospitals when patients present themselves. Due to the already well known reputation of the trypanosomiasis treatment centres most cases make their way to the nearest centre. In 1955, 104 cases were admitted to hospitals and 97 treated as out-patients. These cases were confirmed by recovery of the parasite. A further 40 cases were admitted and 39 treated as out-patients where the diagnosis was made on clinical grounds and cerebrospinal fluid findings.

B—OTHER IMPORTANT DISEASES

BLACKWATER FEVER

In 1955 28 cases were admitted to hospitals of whom seven died. The figures for the last five years are given below:

	1951	1952	1953	1954	1955
Cases	31	29	25	47	28
Deaths	15	9	5	3	7

Apart from 1954 when there was a slight rise, the incidence has remained low and fairly constant.

SCHISTOSOMIASIS

Details of cases seen in hospitals for the year are shown in the table:

	In-patients	Out-patients
S. haematobium ...	287	2,170
S. mansoni ...	21	136
Unspecified ...	53	353

It is likely that the condition is more widespread than is apparent from these figures. This is due to the fact that several endemic areas are not served by large or district hospitals and therefore cases in such areas are not included in the above figures.

ONCHOCERCIASIS

During the year 1955 there were 108 cases admitted to hospitals, and four cases were treated as out-patients. In 1954 the figures were 88 admissions and 626 out-patients making a total of 714. This decrease does not represent any dramatic fall in the incidence but is due perhaps to a decline in the number of examinations done for this condition. Up to 1954 onchocerciasis was rather much to the fore with the presence of a special team of the British Empire Society for the Blind investigating it. Medical Officers were very conscious of the disease. This enthusiasm has probably not been sustained and this may be responsible for the low figures obtained in 1955. The disease is no doubt as prevalent as ever.

HOOKWORM

	1953	1954	1955
In-patient Cases ...	681	920	643
Out-patient Cases ...	3,407	5,474	3,703

The above includes patients attending hospitals with conditions which were attributed primarily to hookworm. The reason for providing information on this disease is that, as it is dependent for its spread on the presence of inadequate sanitary conditions, it serves as a guide to the standards prevailing.

TAPEWORM

No distinction is made in the returns from hospitals between Taenia solium or Taenia saginata, but it is the latter which is the much more common condition. Meat inspection outside the large towns and villages cannot be supervised closely enough. Details are as given below:

	1953	1954	1955
In-patient Cases ...	197	351	279
Out-patient Cases ...	787	636	498

GUINEAWORM

This disease is found chiefly in the rural areas. In districts where it is prevalent it assumes great importance due to its crippling effects on manpower. The disease spreads widely at the height of the dry season when sources of water supply are few and many people use this limited supply. Due to the long incubation period its effects are noted only in the following year usually at about the farming period, when most people have to work on their farms. The adverse effect of this disease on food production is sometimes great. Details of cases seen in the last three years are given below:

	1953	1954	1955
In-patient cases ...	369	373	333
Out-patient cases ...	2,288	1,376	1,381

NON-TOXIC GOITRE

This condition is fairly common in some parts of the country. Thought has been given in the past to a scheme for introducing iodised salt into the country but the idea has not yet been explored. The table below shows details of cases attending hospitals over the past three years:

	1953	1954	1955
In-patient cases ...	30	21	50
Out-patient cases ...	128	10	102

The highest incidence was reported in the north east corner of the country, i.e. Bolgatanga, Bawku and Navrongo hospitals. A few cases were reported from the Obuasi and Konongo mines. These may have been in labour drawn from the north

DEFICIENCY STATES

	1953		1954		1955	
	In-patients	Out-patients	In-patients	Out-patients	In-patients	Out-patients
Beriberi	23	229	29	56	11	75
Pellagra	112	326	68	224	11	93
Scurvey	8	477	7	273	5	45
Other deficiency states	442	4,072	412	1,156	328	3,387

The above figures show the details in respect of patients treated in hospitals over the past three years. In " other deficiency states " are included all stages of deficiency from Kwashiorkor to the minor degrees of malnutrition. Majority of the cases present with varying minor degrees of malnutrition and this is often due to ignorance about proper feeding and food values rather than to lack of food or funds.

CHAPTER III

GENERAL HOSPITAL SERVICES

(i) Work Done in Hospitals

Table XVIII shows total admissions to hospitals by Regions for the year. Details in respect of 1953 and 1954 are shown alongside for easy comparison.

In Accra District and the Eastern Region there has been a steady increase, but figures for the other regions have remained about the same or have decreased. The Kumasi Central Hospital once again has had the greatest number of in-patients (7,430), with the Gold Coast Hospital at Korle Bu (5,783) and Sekondi Hospital (3,786) being the two next busiest. The next ten busiest in order were Tamale (3,338), Oda (3,246), Cape Coast (3,008), Dunkwa (2,844), Koforidua (2,574), Tarkwa (2,369), Keta (2,356), Winneba (1,852), Ho (1,583) and Sunyani (1,520). Of the non-government hospitals which submitted returns the busiest in respect of in-patients was Berekum (2,601) followed by Agogo (2,011) and Konongo (1,662).

(ii) Utilisation of Hospital Beds

Table XIX indicates the number of beds available in government hospitals in 1955 and shows alongside the figures for 1950. The population figures quoted for the areas are those of the 1948 census. Table XX sets out the beds available to higher social grades in the Gold Coast. The ratio of beds in government hospitals to population, using the 1948 census figures, was as follows:—

Gold Coast	1 bed to	1683·5	persons
Accra Region	1 ,, ,,	330·1	,,
Trans-Volta Togoland	1 ,, ,,	3301·6	,,
Eastern Region	1 ,, ,,	2405·2	,,
Western Region	1 ,, ,,	1492·8	,,
Ashanti	1 ,, ,,	1832·1	,,
Northern Territories	1 ,, ,,	3328·3	,,

The above figures refer, as mentioned, only to government hospitals. Mission hospitals are situated in various parts of the country and with government assistance further mission hospitals are being opened so that the final ratio of beds to population is better than indicated above.

(iii) New Hospitals—1955

Substantial progress was made in the programme of providing new hospitals. The out-patients department of the Kumasi Central Hospital was opened to the public during the year and preparations were completed for the transfer of patients from the old hospital to the wards in the first two main blocks. Ancillary services such as the electricity power house and the sewerage scheme were completed and so enabled occupation of the new premises to be undertaken. Progress is being made on the buildings for the Nurses Training College and the other main blocks.

The new Navrongo and Wa hospitals, completed during the previous year, were occupied during this year. New wards in Yendi and the buildings at Jirapa made steady progress. The Mampong Maternity Hospital and Training Centre for Midwives was opened and the construction of the hospital at Mpraeso was completed.

(iv) Hospital Extensions and Alterations

The new out-patients department, X-ray block and other facilities at Sekondi were completed by the end of the year. Substantial improvements, which included the completion of a maternity ward and consulting room, were made to the Koforidua Hospital.

Plans for the first phase of the reconstruction and improvement of the Gold Coast Hospital in Accra were completed and approved. Temporary accommodation for out-patients and a dispensary were constructed so that work on reconstruction of the old premises could commence. Progress was made on the sewerage scheme at the Mental Hospital, Accra, the provision of additional dormitory accommodation for patients, and a lecture hall for pupil mental nurses. A maternity ward and kitchen block were completed at Sunyani. At Tamale improvements were made to the operating theatre and work on additional quarters and a new maternity ward continued.

CHAPTER IV

GENERAL PUBLIC HEALTH

General Comments

The percentages of Government expenditure accounted for by the Medical Department in recent years are set out in Table XXI.

The public health service has suffered during the year from an acute shortage of Medical Officers of Health. Although there were four Medical Officers of Health on the establishment—one on pensionable terms and three on contract—not one was available for public health duties by the end of the year. None of the existing vacancies resulting from retirements and resignations was filled during the year. As in previous years, officers have not been attracted to this service, because the financial renumeration is much greater in other branches of medicine especially in clinical practice. Health visiting also suffered considerably and was almost at a standstill. Here again there is little inducement for a qualified nurse or midwife to enter this important field of work. The two separate classes held for the training of Qualified Registered Nurses and State Registered Nurses as Health Visitors were merged into one by the Health Visitor Tutor because the number of pupils in each class was very small. However, a bright side of this service was that there was no decrease in the number of the health inspectorate staff.

During the year work continued on the drafting of new Quarantine (Maritime) Regulations and the proposed Public Health Act. Paucity of staff with public health experience has meant that this legislative work has not progressed rapidly.

A start was made in health education with the commencement of a campaign in Togoland against diseases spread through unclean water and improper disposal of excreta. The campaign was conducted by the Medical Field Units and the Department of Social Welfare and Community Development. By the end of the year a large number of latrines had been constructed by communal labour. The campaign continues. An attempt will be made in the coming year to extend campaign of this nature to other areas.

Completion of the Tumu Health Centre during the year brought the number of such structures in the country to four, the others being situated at Bimbilla, Kpandu and Effiduasi. Progress on another five continued.

The programme of the Department of Rural Water Development for the provision of water supplies in the rural areas was pressed forward and the results were gratifying.

There was no major epidemic of any infectious disease during the year. In view of the staff situation outlined above this was fortunate although the Medical Field Units organisation was available for dealing with anything on a large scale.

Mosquito Control

With the vast development programme going on in the country, particularly in the large towns, houses are frequently constructed without any provision being made for drains. Where drains are put in, there are often no street drains to collect waste water, resulting in puddles and other collections of water with consequent mosquito breeding. The task is made more difficult by the health authority often not being aware that this development was projected and therefore not having made provision for it. The central Government Departments are often among the greatest offenders in this respect.

There was a short sharp epidemic of jaundice intermingled with a few cases of yellow fever in the Kintampo district during the latter part of the year. This is described later in the section of this report dealing with the Medical Field Unit, and serves as a reminder that no relaxation of anti-mosquito measures must be permitted. Routine house to house inspections have therefore been carried out regularly at all centres.

General Sanitation

Urban

Except at a few boarding schools and hospitals there is no water carriage sewage disposal system for any town in the country. Plans have been submitted in the past for both Kumasi and Accra but the capital expenditure involved has deterred the authorities concerned from undertaking the construction of such disposal schemes. In the mean time more buildings with separate septic tanks are being constructed and more and more soil pollution is taking place. In addition, an ever increasing number of householders who for various reasons would resist having to be connected to the main sewers when these are eventually provided, is being built up.

Refuse disposal in the larger towns has been by controlled tipping. In many instances, however, the refuse is usually not covered over at the end of the day and there is considerable nuisance from smell and flies. In Accra, there is a large destructor and part of the refuse is disposed of in this. A part is also disposed of by controlled tipping.

Rural

In the rural areas pit latrines are generally used and there is therefore no problem in respect of night soil disposal. Refuse is disposed of by incineration but in some places it is just dumped on the outskirts of the village without any control. The central Government has encouraged the Local Authorities to take over their responsibilities in this connection and a few have done so, but generally speaking, Local Authorities have not yet shown themselves ready or equipped to assume full control of public health activities in their areas.

PREVENTABLE ILLNESS

Much of the illness that occurs in the country is of a preventable nature. If adequate water supplies could be made available over the entire rural area, if people could be convinced that they need and should use latrines, and if lessons on personal and food hygiene could be put over to the public many more beds would be saved in hospitals for more urgent surgical and medical cases, and the total number of cases admitted to hospitals would be reduced considerably. This would mean a saving in money and a fitter nation.

NUTRITION

Every year brings its quota of nutritional disease and 1955 was no exception. The general standard of living in the country is reasonably high, there is little starvation. What is seen more often is really malnutrition. Infants remain on the whole fairly healthy as long as they continue to be breast fed and to receive sufficient nourishment this way. The weaning period is a dangerous one in that the diet is mainly carbohydrate and the infant is exposed to all the dangers of poor hygiene. The main dietary deficiency is protein. In a country where in many places herds of cattle and other livestock represent a man's visible wealth, it is difficult to induce the people to use such cattle or livestock for food. A still greater factor for consideration however, is the importance of animal trypanosomiasis in relation to human nutrition.

FOOD HYGIENE

The low standard of hygiene amongst food sellers causes health officers much concern. Legislation can be framed and prosecutions carried out but until the public learns to demand a high hygienic food standard these people will be patronised and do business. These comments refer particularly to the street sellers. The restaurants in the bigger cities are frequently inspected and are controlled by the system of licensing that pertains.

SCHOOL MEDICAL SERVICE

There is as yet no organised school medical service in the country. School children are examined as and when possible by health visitors and medical officers. The need for one is recognised but, as already mentioned, medical officers interested in public health are in such short supply that no immediate prospect of providing this service is envisaged.

SPECIAL CLINICS

(*a*) *Dental Clinics.*—Clinics are operated in Accra at the Gold Coast Hospital, and the Ridge Hospital, in Kumasi at the Central Hospital and in both Sekondi and Tamale Hospitals. There were no statistics available in 1955 except from Kumasi where a total of 2,879 patients were treated. A summary of the dental surgeon's work (Kumasi) is as follows :—

Class of Patients	Extractions		Filling and other conservative treatment		Prosthetic treatment		Total
	Male	Female	Male	Female	Male	Female	
Infants	70	46	6	5	—	—	127
School Children	117	109	77	44	3	—	350
Adults.	1252	486	416	162	152	34	2,402

(*b*) *Ophthalmic Clinics.* Ophthalmic clinics are operated in Accra and Kumasi under the charge of specialised officers and their work in detail has been treated separately under the report of the Specialist Ophthalmologist.

PRISONS

The daily average population for all government prisons was 3,757·58 in 1955 as compared with 3,488·44 in 1954. There were 9 deaths, giving a death rate of 2·39 per 1,000 prisoners. In 1954 the death rate was 6·88 per 1,000 prisoners. The daily average on the sick list was 38·21. Overcrowding still prevails in all Government prisons but it is hoped that, with the completion of the new central Prisons at Nsawam, the position will be considerably alleviated. Deaths in prisons during 1955 numbered 9, due to the following causes (i) haemoptysis due to pulmonary tuberculosis, (ii) carcinomatosis, (iii) tuberculosis (iv) progressive liver failure and aneurysm, (v) acute pancreatitis, (vi) duodenal ulcer, (vii) suicide (viii) carcinoma of the liver and, (ix) cardiac failure and unresolved pneumonia.

Patients suffering from infectious diseases were transfererd to the prison camp at Ankaful near Cape Coast for special treatment.

The comparative table below indicates the health of prison population for the years 1953–55.

Year	Daily average of prison population	Daily average on sick list	% of daily average on sick list	Deaths	Deaths per 1,000
1953	3543·67	47·70	1·34	15	4·23
1954	3488·44	33·63	·96	24	6·88
1955	3757·58	38·21	1·01	9	2·39

Port Health

(*a*) *Sea ports*—The main port for the country is Takoradi. Except in a few instances, all passengers coming into the country by sea disembark there. Other ports are Accra, Cape Coast, Winneba and Keta. Development of Tema as a new port near Accra, continues.

There is a Port Health Officer stationed permanently at Takoradi. He is also Medical Officer of Health for the Sekondi-Takoradi Municipal area. There has been a steady increase in shipping every year and the volume of work is high. This may be seen in the tables below :—

Year	No. of ships cleared	No. of dock labour examined
1951	891	5,760
1952	972	11,148
1953	1065	9,141
1954	1063	10,561
1955	1115	12,906

TABLE SHOWING THE ARRIVAL AND DEPARTURE OF DECK PASSENGERS 1951–1955

Year	Arirval	Departure
1951	6,354	6,173
1952	5386	6,625
1953	5,159	4,484
1954	5,554	5,596
1955	4,642	6,178

(*b*) *Airports.*—Accra was until recently the only airport used in the country for the arrival and departure of planes on international flights. Towards the end of the year under review Takoradi Airport was also brought into use for international air traffic. Action to regularise the position with regard to the requirements of the International Sanitary Regulations still continues. Details of the activity at these two airports are shown in the tables below.

Accra

Year	PASSENGERS			Aircraft Disinsected
	Departures	Arrivals	In Transit	
1951	10,844	13,990	1,625	1,976
1952	13,541	13,577	1,382	1,996
1953	13,305	13,001	753	1,590
1954	16,529	16,007	253	1,894
1955	16,071	15,670	187	1,870

Takoradi

Number of aircraft disinsected	107
Number of passengers examined	623
Number of passengers disembarked	320
Number of passengers embarked	303

CHAPTER V

THE MEDICAL FIELD UNITS

INTRODUCTION

The Specialist in charge of the Medical Field Units, Dr. Waddy, proceeded on retirement during 1955 and his departure was a great blow to the organisation. During the latter part of the year two of the remaining three doctors also left and though reliefs were provided their absence was felt as it takes several months before a new officer familiarises himself with the problems and the staff.

Dr. Waddy took over from Dr. Saunders in the early part of 1951 at the time when the Tryps/Yaws Campaign was undergoing a metamorphosis to Medical Field Units. Dr. Saunders had gathered together and trained a few Northern Territories assistants in 1937 at Gambaga in response to the epidemic of trypanosomiasis which had been gaining ground in the north of the Gold Coast for some years. For the next decade the organisation remained small and was concerned entirely with the control of this single disease. In 1947 the staff of an abandoned yaws project in Eastern Dagomba was absorbed into Dr. Saunders' unit which then turned its attention to yaws as well as trypanosomiasis. The generally low incidence of sleeping sickness throughout the Gold Coast by the late 1940's and the very poor long-term benefits achieved by bismuth and arsenic in mass campaigns against yaws were by then causing some doubts about the future of the organisation. In 1951 the Gold Coast Government accepted its conversion into a general epidemic/endemic diseases unit, and now fell into line with the policy in other countries of West Africa. Dr. Waddy arrived at the time of this change and during the succeeding five years achieved, through his intimate knowledge of field conditions, in establishing the multi-disease organisation we have today and which owes a great debt to him.

Dr. Waddy took up an appointment in the Ross Institute at the London School of Hygiene and Tropical Medicine in October, 1955 and thus his contact with West Africa, and we hope with the Gold Coast Medical Field Units, has not been entirely severed.

ORGANISATION

The headquarters are in Kintampo and consist principally of clerical and administrative staff dealing with records, correspondence and finance, a very large store section, and a workshop for the maintenance of Medical Field Units vehicles. It has not been possible to carry out any laboratory or other comparable training at headquarters because the staff there are essentially administrative rather than technical, and moreover there is a shortage of senior officers who would be responsible for the specialised and more advanced training.

The field work is carried out by four major units with headquarters at Kintampo for Ashanti, Ho for Trans-Volta Togoland, Gambaga for the North-East of the Northern Territories and Lawra for the North-West of the Northern Territories. No extension of the work has been made into the Colony proper. There is also a unit based at Yendi in Eastern Dagomba in the Northern Territories which is concerned entirely in dealing with the yaws problem of that area.

FUNCTIONS OF MEDICAL FIELD UNITS

There are two major functions of the Medical Field Units, and both are equally important. The first is the diagnosis, the treatment and in some instances a limited prophylaxis of certain endemic or epidemic diseases. Any well trained, well supervised staff can, within limits, do this type of work. It requires, of course, a basic training and a continuous checking up of the work in the field, but in a reasonably sized unit this does not necessarily need the full time attention of a doctor; a principal function of the Superintendent and Supervisor grades envisaged when these were made was that they should be able to control the major part of this basic work. The second aspect of the work of Medical Field Units might be called research or investigation into the many different medical problems in rural communities. Firstly the problems have to be defined and then an attempt made at their solution. This is the work of medically trained persons, or of those who have received advanced training in some particular facet. A medical officer newly appointed to medical Field Units requires at least a year to get to know his staff, the problems of his region and to orientate himself fully to the nature of the work. Thereafter he develops his own interests in endemic diseases, which should lead to a far better appreciation of how certain of the problems in disease control might be tackled. Not all research requires a laboratory. Though a careful study of the records obtained by Medical Field Units survey teams, together with the long continued observations of a medical man and the results of the investigations of the special points that would appear to arise might not lead to any startling conclusions, there is no doubt that they are a basic requirement in the proper understanding of the epidemiology of many diseases in this country. It is a fact that up till the present the medical man power required to give an impetus to a fuller use of Medical Field Units in this direction has not been available.

The accurate plotting during field surveys of certain endemic diseases for which as yet there are no applicable methods of mass control—such as bilharziasis, malaria and guinea worm infection, provides valuable information. For, as methods of mass control are evolved and become available a clear indication can be given of the areas which might be selected first for treatment. The importance of this aspect of the Medical Field Units surveys is often underestimated.

TRAINING

Every Annual Report for a number of years has stressed the need for some formal systematic training, not only for those entering Medical Field Units but also for long established staff. All that has ever been possible has been that newly recruited staff have sometimes been fortunate enough to gain some three months' experience in the very small laboratory used by the Ashanti Unit in Kintampo before being posted to the field teams. For the rest they have been trained in simple microscopy and in the basic field techniques in the mobile teams themselves—this being carried out by the Field Assistants in charge. In due course they become competent in the recognition of trypanosomes, malaria parasites and microfilariae in blood films. Staining of films, clinical recognition of leprosy, of guinea worm and of the various simple manifestations of yaws and vaccination practice are all equally part of their early training. But this is not enough. It must be combined with elementary theoretical training to give the staff the necessary interest in the work they are doing. Only once a year has it been possible to carry out in Kintampo, for a fortnight at a time, a systematic course of lectures and demonstrations to a selected few of the staff. This required that for such a period all other work in Headquarters is neglected by the officer carrying out the training since twenty or more men on such a course cannot be permitted to be without some employment or training during the whole of working hours and it has not been possible to delegate more than a fraction of the training to non-medical personnel.

AREAS SURVEYED AND WORK DONE

In the north-east of the Northern Territories the field units have continued their investigations and treatment from the North Mamprusi area, down south to near Kpandai. In the nort-west they have moved from the Tumu district to Lawra and Jirapa, completing a re-survey of the Kamba Valley which was previously heavily infected with trypanosomiasis until Dr. Morris began his clearings there in the early forties.

In Ashanti the local units have been engaged in surveying in the eastern part of the country not previously investigated, and in Trans-Volta Togoland the surveys at Kete-Krachi and in Central Tongu have been continued.

A development of major importance during the year was the acceptance by the Gold Coast Government of assistance for Medical Field Units from UNICEF—21,000 10cc vials of P.A.M. for the treatment and control of yaws in 1955–56. The first consignment arrived in September, 1955. A similar amount has been allocated for 1956–57.

The total number of persons examined during surveys in 1955 was 245,862; the year's work is summarised in the table on page 30. The routine work has gone on as before with slight modifications. There were four major specific objectives in 1955, viz.:—

(i) The expansion and development of the yaws campaign in the severely affected area of Eastern Dagomba. The assessment of the efficacy of the different policies of treatment of yaws with P.A.M. which the units had been carrying out. The standardization of yaws treatment and prophylaxis in all mobile units.

For two years an *ad hoc* campaign for the control of yaws in Eastern Dagomba in the Northern Territories has been carried out. Here, the incidence of overt infection reaches 15 per cent in some places. P.A.M. has been used exclusively.

A number of different dosage schemes have been tried in this and other parts of the country by Medical Field Units. The results, both from a therapeutic and from a prophylactic point of view were given in a paper read by Dr. Scott to the W.H.O. Conference on Yaws in Enugu in November (WHO/VTD/184). The conclusions arrived at the conference were that 2cc is an inadequate dosage for the treatment of yaws by a single injection and that prophylactic treatment should be given to all.

Although this field investigation was completed during the year and an assessment of its results carried out, it was not possible to initiate the changes in the dosage scheme to accord with the conclusions of the conference. This was due to the fact that with the limited medical staff available, medical supervision so essential when changes of a major order are being introduced was not practicable. For the same reason it was not possible to expand the work in Eastern Dagomba. It was felt that with the limited medical personnel available, it would have been unwise to introduce major changes until policies had been more clearly defined and adequate supervision assured.

The Medical Field Units have, however, achieved a greater part of their aim in following up to a logical conclusion and in making an evaluation of the different treatment policies which were begun experimentally.

(ii) The carrying out of mass treatment on cases of onchocerciasis in an area of hyperendemic infection in the Northern Territories.

Since Dr. Waddy's paper in 1949 on onchocerciasis in the Northern Territories of the Gold Coast drew attention to the enormous problem that there is in dealing with this infection some first steps have been taken towards its control. The British Empire Society for the Blind undertook surveys which have since been completed—the entomological survey ended in March, 1955 and Dr. Crisp's report which is expected soon is being keenly awaited.

In 1953 the Field Units began in the Tumu district of the north west of the Northern Territories, a limited mass treatment of cases found on survey. In that year 499 cases were treated, each course of treatment consisting of five injections of antrypol spaced at weekly intervals. In 1954 the number of cases treated in the same area was 74. This year the work has been greatly extended and treatment has been given to nearly 4,000 cases in the whole of the Northern Territories. It was hoped that it would be possible to carry out at the same time nodulectomies, but shortage of medical staff prevented this from being continued after it was commenced in January.

The mass campaign against onchocerciasis using antrypol had to be stopped towards the end of the year. There were two reasons for this. Firstly there were quite a number of reactions during treatment and adequate medical supervision was not possible. At one time there were 98 such reactions amongst a group of 205 patients under treatment and the nearest doctor was 200 miles away. Secondly it was felt that a full assessment of the results obtained so far should be made scientifically before further treatments were undertaken. Unfortunately this could not be carried out fully due to shortage of experienced staff.

MEDICAL FIELD UNITS ACHIEVEMENT

Unit	Persons Examined	Yaws Cases Treated *	Persons given Prophylactic Penicillin (Approx. No.)	Tryps. Cases Treated	Onchocerca Cases as percentage of those examined	Bilharzia Cases as percentage of those examined	Guinea worm	Leprosy		Vaccination	
								Seen	Treated	Primary	Re-vaccination
Ashanti	†70,411	2,635	31,680	603	14·06	6·17	509	1,166	628	16,940	29,430
T.V.T.	34,575	5,575	15,525	37	19·85	8·98	429	911	196	14,829	13,310
North East	70,707	2,553	—	235	39·72	37·63	356	2,382	287	14,683	28,900
North West	35,319	2,311	—	93	27·58	14·35	413	1,637	806	14,980	12,270
Yendi Yaws	34,895	4,619	15,705	—	—	—	—	—	—	—	—
Total	245,862	17,693	62,910	968	28·7	8·63	1,707	6,096	1,917	61,432	83,901

*Includes " special surveys ", not for all diseases.

†Not including cases treated at yaws follow-up.

In summary of this section it might be said that the year which started off with so much promise for onchocerciasis work has been disappointing because of lack of medical staff to supervise a stituation where treatment can be dangerous and where the need for " on the spot " assessment of the results and interpretation of the value of this single means of control is most desirable.

(iii) The substitution of the use of pentamidine for antrypol in the treatment of trypanosomiasis in treatment centres and mobile treatment units, and in other ways to modify and adapt treatment policy in the light of experience, and consideration of the possibility of carrying out mass prophylaxis against trypanosomiasis in those areas where the disease continues to occur in spite of repeated surveys and treatment.

Unfortunately it was not possible to make any progress towards the achievement of this objective owing largely to staff limitations towards the end of year when the drug was first received in sufficient amounts.

(iv) The standardisation of record keeping and returns in Medical Field Units.

By the beginning of 1955 considerable uniformity and stability in this important aspect of the work had been reached except with regard to yaws. Nonetheless in a general manner there was still much to achieve. During the year a slight advance was made with this work but it was necessarily slow under existing conditions. Careful thought must first be given to any change of plan and it must be most carefully explained to all grades who are concerned in implementing it. This cannot be done by means of a circular issued from an office, it must be achieved by personal contact.

ENDEMIC DISEASES

Trypanosomiasis

During the last few years the general incidence of sleeping sickness found on Medical Field Units surveys has been exceedingly low in the Northern Territories and Trans-Volta Togoland. Only in Ashanti have infection rates approached a significant figure.

Incidence (in Percentage) of Sleeping Sickness on Surveys

	1952	1953	1954	1955
Northern Territories	·1	·1	·01	·11
Trans/Volta Togoland	—	—	·08	·08
Ashanti	·2	·15	·22	·27

The Northern Territories as far as the Gold Coast is concerned was the home of sleeping sickness in the West African pandemic which occurred roughly between 1930 and 1940.

The pandemic was associated in the North with conditions far more favourable to the spread of sleeping sickness than obtained in Ashanti but when the wave passed, the situation reverted to the pre-epidemic state where the major trypanosomiasis problem lay across central and northern Ashanti. This is precisely what had been found before 1930. We appear now to have reached a fairly low level of infection in Ashanti beyond which further reduction is hardly possible by the means of control used at present. A feature of trypanosomiasis in parts of West Africa today which is quite characteristic in the Gold Coast is the occurrence of small well marked foci of infection where the incidence may be ten times that occurring in the surrounding country. These foci generally consist of not more than a few villages.

On a smaller and hardly noticeable scale, the same feature is found widespread in villages or parts of villages. On repeated surveys it is observed that cases in an area tend to be discovered in the same groups of dwellings. This indicates that the problem is largely an entomological one and also that to obtain the maximum effect from the methods of control employed they should be concentrated in these localities where the disease persists at relatively high incidence.

Yaws

The prevalence of overt yaws discovered on surveys shows a consistent pattern. It is relatively low in the drier Northern Territories; often it is found to be less than one per cent in populations of over 20,000 even where the standard of living is low. Moving southwards into the forest of Ashanti the prevalence in the main increases with an average of 4 per cent or 5 per cent, with pockets of much heavier infection rates rising to 15 per cent. In Togoland as far north as latitute 10°N the incidence is particularly high and the most severely affected area lies between Kete-Krachi and Yendi.

Medical Field Units substituted P.A.M. for bismuth and arsenic therapy in mass campaigns towards the end of 1952; various policies were investigated and eventually a modified Haiti scheme was accepted, this being 2 cc to all cases of yaws and 1cc to all other juveniles.

The World Health Organisation became interested in the large scale experiment with low dosage. In the meantime populations treated by the different policies which had been previously tried out were followed up in 1955. The conclusion drawn was that an improved therapeutic effect could be obtained by administration of more than 2 cc to cases, and considering the present low price of penicillin in relation to administrative costs of carrying out a campaign it would be advisable to increase the dosage. The finding was underwritten by the recommendations of the WHO meeting at Enugu in November. It was not possible to alter the dosage policy in the Gold Coast before the end of 1955, but this will be dealt with early next year.

By mid 1955 the Gold Coast Government had accepted an offer of WHO/UNICEF P.A.M. for Medical Field Units yaws campaign for 1956 and 1957, at 21,000 vials a year. A total of 17,896 cases of yaws infection have been treated and some 62,910 other persons given P.A.M. treatment with a view to dealing with the latent reservoir of infection and protecting uninfected persons for the short period whilst cases with whom they were in close contact were being rendered non-infective.

LEPROSY

This year again it is confirmed that the incidence appears to increase as one goes up north. In the table below the areas surveyed in Ashanti during 1955 are listed from south to north and the relationship with increasing infection rates is striking.

Unit	Examinations	Cases	Percentage
Ashanti Akim South	9,162	18	0·2
Mampong East	12,014	11	0·09
Mampong North and South	10,511	35	0·33
Nkwanta (A)	7,181	17	0·24
Nkwanta (B) part of	5,152	18	0·35
Adudwan	1,692	8	0·47
Atebubu	5,829	108	1·86
Garadima	1,981	36	1·82
Abease	2,881	115	3·99
Yeji-Prang	7,864	172	2·19
Total	64,267	538	0·84

This is probably due in a large measure to varying standards of living. In the southern areas, which are mainly cocoa growing areas and therefore relatively prosperous the incidence is low, while in the north, poor housing conditions and scarcity of water favour transmission of infection with a resulting high incidence. On the other hand persons attending surveys in the north willingly expose greater areas of the body for examination than the modest southerner and the chances of the smaller skin lesions being detected among the former are thus increased.

Leprosy treatment is given by Medical Field Units in a few places. All such treatment centres are run by Field Assistants under the direction of the Medical Officer. The Medical Officer visits the centres when in the neighbourhood and aims at seeing and reviewing all the cases at least twice a year.

The policy followed in regard to admissions at these centres is that only genuine residents of the area, living within a five mile radius i.e. walking distance, are taken on. The intention is to avoid an influx of cases from other areas and to ensure good attendance. In the main, these objectives are achieved.

Discharge rates have been low. This is because there is little social stigma attached to leprosy in the rural areas and patients are not desperately anxious to be discharged. It is felt that it is better for them to be under treatment for longer time rather than for too short a time.

A number of D.D.A. reactions have been reported during the year and a few of the deaths occurring among the patients have been ascribed to particularly severe reactions.

ONCHOCERCIASIS

A great expansion of the scheme directed towards the control of this disease in the Northern Territories of the Gold Coast took place this year.

The position regarding onchocerciasis in the Northern Territories has been very ably described by Dr. Waddy. Briefly, the disease occurs in serious proportions in a belt across the upper part of the country and is associated with a relatively high incidence of blindness (up to 10 per cent in some parts) and depopulation along the upper reaches of the Volta River and its tributaries.

In the absence of an effective method of controlling the vector over a large area, it seemed that treatment of cases with antrypol offered the best hope of control at the moment. Such treatment by its lethal action on the adult worm reduced the reservoir of infection for the fly : In 1953 nearly 500 cases were treated in the Tumu District which is one of the most heavily infected areas. Since then the number of cases treated in this area has fallen.

Onchocerciasis, like any other serious transmissible disease, presents two quite separate problems. The first and from a public health point of view the more important is the arrest of the spread of the diesase. The second is to ensure the patients' complete recovery from the effects of infection. This latter consideration is the only one that matters to those affected and in onchocerciasis where the disability of blindness has such economic consequences it is not unimportant from the point of view of public welfare. If a means of control can be employed which achieves both objectives so much the better.

Towards the end of 1954, Dr. Waddy had evidence that patients with onchocerciasis with reduced visual acuity had recovered their sight in some degree after antrypol therapy. It was decided that in 1955 the programme of treatment would be considerably extended in the north and that it would be combined with surgical removal of as many nodules as possible from the cases. The nodulectomy programme came to naught because the medical officer went on transfer without relief. Mass treatment with antroypol was however given to 4,773 cases. In the north east the absentee rate was high, partly due to farming distractions and partly due to a high incidence of reactions. In the north west the attendance rate was very good and there were few reactions. The reactions would appear to have been connected in some way with the nutritional state of the people.

An attempt was made to assess the value of antrypol treatment given to the cases treated in 1953 but no firm conclusions could be based on the findings. More investigations into the value of antrypol in reducing the reservoir of infection in mass campaigns has yet to be carried out.

Any campaign against onchocerciasis must be applied not just within one territorial limit but to the hyperendemic area of West Africa as an entity. This has repeatedly been stressed.

Guinea worm

Routine surveys for the year were carried out and the "black spots" continued to be mapped. In this disease, in which the life cycle of the worm is well known, it should be possible to deal with the badly infected areas. Here is a disease where co-operation between various departments together with health education can do so much to eradicate. The table below shows the distribution of guinea worm found in the 1955 field surveys. The overall incidence is not high but in certain parts of the country there are villages or groups of villages where infection rates vary from 10 to 20 per cent.

Guinea Worm Finding on Surveys

Unit	Villages		Persons Examined	Cases	Percentage
	Number	Infected			
Ashanti...	205	72	68,815	509	0·74
T.V.T.	206	71	34,530	429	1·24
North East	285	108	70,707	356	0·50
North West	113	60	35,319	413	1·16
Total	809	311	209,371	1,707	0·81

Bilharzia

Only children and a random sample of the adult population were examined for the disease. To examine every one is time consuming and slows down the survey considerably. The findings for the year are shown in the table below:—

Bilharzia Infection Found on Survey .

Unit	Persons examined for Bilharzia	Number infected	Percentage
Ashanti	6,246	384	6·17
T.V.T.	2,394	215	8·98
North West	2,550	366	14·35

Malaria

The Medical Field Units only concern themselves with the incidence and distribution of this disease. No control is attempted. In the past there has been a tendency to overdiagnose this condition on surveys, and following a check carried out in conjunction with the Accra Malarial Unit, an attempt was made to correct this tendency. No diagnosis is now made on the finding of a single parasite. The Table below shows the findings for the year.

MALARIA CASES DIAGNOSED BY FIELD SURVEYS

Unit	Examinations	No. with Parasites	Percentages
Ashanti	39,465	9,447	23·94
T.V.T.	33,569	16,127	48·04
North East	70,707	17,658	24·97
North West	35,319	11,705	33·04
Total	179,060	54,937	30·12

VACCINATION

Vaccination against small pox is done as a routine during field surveys. Every year thousands of people are given protection against this disease. Details of the work for 1955 are given in the Table below.

VACCINATIONS PERFORMED ON SURVEYS

Unit	Primary Vaccination	Re-vaccination
Ashanti	16,940	29,430
T.V.T.	14,829	13,301
North East	14,683	28,900
North West	14,890	12,270
Total	61,342	83,901

An important factor in the efficacy of the vaccine used is its potency outside the refrigerator. During the last year Medical Field Units were unable to obtain the dried French vaccine and had to revert to the wet lanolinated variety which raised the old question of storage in the field.

EPIDEMICS

It is the function of Medical Field Units to deal with epidemics when district medical and health officers can no longer cope with them. There were no major outbreaks of epidemics in 1955. There was one minor small pox epidemic in Ashanti and four officers were loaned from the Medical Field Units to the Medical Officer of Health for Ashanti to assist in mass vaccination campaigns.

There was a small but interesting epidemic of jaundice in and around Kintampo between August and October. Attention was first drawn to this by four deaths associated with jaundice in one week. Liver sections taken from three of the cases were reported on from Accra and Lagos as yellow fever. In the first death it had not been possible to do a post-mortem examination. Other cases followed, varying clinically from those who were deeply jaundiced but only mildly ill, to those who had a very severe hepatitis with little discoloration of the conjunctivae. The Virus Reaserch Institute, Lagos, sent Dr. Porterfield and Mr. Borman together with a mobile laboratory. They arrived in time to see quite a number of suspicious cases. Yellow fever virus was recovered from only one of these cases. The others, as well as earlier convalescents showed on serological examination that they were not cases of yellow fever. It would appear that there had been simultaneously two aetiologically different outbreaks associated with jaundice.

CHAPTER VI

THE LABORATORY SERVICE

(i) GENERAL

The medical and technical staff of the laboratory services are shown below:—

	At Post	*Vacancy*
Specialist Pathologist	1	1
Pathologists	1	3
Senior Laboratory Superintendent ...	—	1
Laboratory Superintendents	5	3
Laboratory Assistants, *Grade I* ...	8	2
Laboratory Assistants, *Grade II* ...	34	16
Pupil Laboratory Assistants	26	—

In addition to the above a temporary biochemist was employed in the latter part of the year.

The staffing of Kumasi Central Hospital required the services of a Pathologist and the retirement of Dr. M. H. Hughes left only one senior officer, the Specialist Pathologist, in the Medical Research Institute, Accra, which is the headquarters of the service. The retirement of Dr. M. H. Hughes was a severe loss to the bacteriological and research services of the Gold Coast. He did most valuable work on onchocerciasis and the enteric fevers and in the last six years had published twenty-one papers on various subjects in the medical literature.

All outstation hospitals with the exception of Nsawam now have a trained laboratory technician on their staff and the staff situation in the larger medical centres particularly Kumasi and Sekondi has improved.

Three laboratory assistants have returned from advanced training courses in the United Kingdom. Four assistants have now undergone this type of training. Six pupil laboratory assistants have completed two years training and 12 have completed their first year. Eight commenced training this year. The training course is of three years duration.

(ii) THE MEDICAL RESEARCH INSTITUTE

The shortage of senior staff has limited the scientific activities undertaken. Papers published by the members of the staff during 1955 are shown below.

Laboratory investigations have been performed for Dr. R. H. Bannerman, Specialist Obstetrician, investigating the abnormal haemoglobin diseases in pregnancy; Dr. Forster, Specialist Psychiatrist, investigating the abnormal haemoglobin diseases in schizophrenia; and Dr. S. R. Dodu investigating diabetes mellitus and anaemia. Assistance was also given to Dr. and Mrs. Blair, University College, in connection with their work on stilboestrol induced cancer in hamsters.

(iii) SCIENTIFIC PUBLICATIONS

(*a*) EDINGTON, G. M. JUDD, J. H. AND WARD, A. H. (1955). Delayed Toxicity of Radiostrontium in Monkeys. Nature. *175*, 53.

(*b*) EDINGTON, G. M., LENMANN, H. AND SCHNEIDER, R. G. (1955). New Results on Haemoglobin G. Trans. R. Soc. Trop. Med. Hyg., 49, 309.

(*e*) EDINGTON, G. M. AND LENMANN, H. (1955). Sickling and Malaria. Report to WHO Conference on Malaria in Africa, Lagos, September.

(*h*) EDINGTON, G. M. AND WARD, A. H. (1955). Some Gold Coast studies on the biological effects of radioactive materials. Paper read to West African Science Assoc., April.

(*i*) EDINGTON, G. M. (1955). The Pathology of Sickle-cell Disease in West Africa. Trans. R. Soc. Trop. Med. Hyg. *49*, 253.

(*j*) HUGHES, M. H. (1955). Bacillary dysentery in Accra. W. Afr. Med. J. n.s. *4*, 73–77.

(*k*) HUGHES M. H. AND CHELMICKI, B. J. (1955). A case of Provocation Paratyphoid. W. Afr. Med. J. n.s.4 96–98.

(*l*) HUGHES, M. H. (1955). Zoonoses in the Gold Coast. J. W. Afr. Sc. Ass. *1*, 91–94.

(*m*) HUGHES, M. H. (1955). Enteric fevers and normal Salmonella agglutinins in the Gold Coast. J. Hyg., Camb. *53*, 368.

(*n*) KING, E. D. AND GELLATLY, D. (1955). A paratyphoid C. outbreak among chickens in the Gold Coast. W. Afr. Med. J. n.s. 4. 41–42.

(iv) BACTERIOLOGY

The total number of investigations undertaken rose from 14,575 to 16,231.

A salmonella was isolated on 170 occasions and enteric fever is an outstanding problem in Accra. Various aspects of the problem have been discussed by Hughes (1955) in a number of papers.

Dysenteric organisms were isolated from 93 patients and culture of the stools from 423 babies suffering from diarrhoea revealed the presence of known pathogens in 48 (11·3 per cent), organisms of the shigellae group being isolated 35 and of Salmonella in 13 instances.

One patient was seen suffering from anthrax meningitis and a post mortem was performed on a patient who died of intestinal anthrax.

(v) BIOCHEMISTRY

The total number of investigations performed rose from 3,175 to 5,154. The routine investigations available to clinicians have been expanded by the addition of procedures for estimating lipides and fibrinogen in blood and trypsin in faeces. Electrophoretic analysis of the serum proteins has been initiated. In approximately 50 per cent of 107 test meals performed a high acidity was present in the gastric juice. In seven instances hydrochloric acid was absent but as histamine was not employed this finding requires confirmation. Further information on the composition of the gastric juice in the Gold Coast African is required and its effect on peptic ulceration and anaemia evaluated.

(vi) HAEMATOLOGY

The total number of investigations performed rose from 6,718 in 1954 to 8,427 in 1955, the increase being due to the increased demand for blood for transfusion purposes and an increase in the number of electrophoretic analyses of haemoglobin.

Blood transfusion

There are now 1,274 volunteer donors registered in Accra and 548 pints of blood have been stored and transfused.

No cross matching accidents have occurred and the incidence of reactions has been in the region of two per cent due mainly to faulty cleaning of the apparatus employed. The most serious hazards in the Gold Coast are probably over enthusiastic transfusion therapy in the anaemic patient and the transfusion of blood containing mixed abnormal haemoglobins. A paper embodying these findings has been accepted for publication.

The abnormal haemoglobins

The haemoglobin pattern of 653 individuals has been analysed and the patterns seen were AA(316), AS(197). AC(54), SC(45) SS(34) CC(4), AG(1), unidentified (2). The abnormal haemoglobins complicate almost every aspect of medicine in the Gold Coast and investigations on their effect on sickling and malaria, blood transfusion, anthropology and mortality have continued and a number of papers are in process of preparation. Acknowledgement must be made to Dr. H. Lehmann, St. Bartholomew's Hospital, London for his ready assistance in confirming our electrophoretic results.

Abnormalities in the combined fragility test have also been discovered, and for the first time, a case of congenital haemolytic icterus in a Gold Coast African has been reported.

(vii) MORBID ANATOMY

Specimens from 604 necropsies and 837 biopsies received from outstations have been dealt with in 1955, the figures for 1954 being 467 and 724 respectively. The causes of death are shown in Table XXII.

Research on liver pathology, haemosiderosis, abnormal haemoglobin diseases and tumours has continued.

(*a*) *Liver pathology.*—Cirrhosis and hepatoma are common and acute massive necrosis is common in pregnant women. A paper on hepatic disease in the Gold Coast has been submitted for publication. It was concluded that the incidence of portal cirrhosis was relatively high in autopsy material in the Southern Gold Coast. Males appeared to be more frequently affected than females. The possibility of reconciling these findings with the theory that malnutrition and/or malarial infection in childhood are responsible for cirrhosis in the adult was discussed. The incidence of primary liver cancer was also high whereas cholecystitis and gall stones were infrequently seen.

(*b*) *Haemosiderosis.*—Of 728 livers examined iron pigment was present in 294. The distribution was mainly reticuloendothelial but predominantly parenchymal distribution occurred and the severe case of haemosiderosis could not be distinguished from idiopathic haemochromatosis. A mild form of haemosiderosis has been seen in monkeys in the Gold Coast.

(*c*) *The abnormal haemoglobin diseases.*—Paper electrophoresis has been performed on the blood of 99 patients coming to necropsy. Three patients were suffering from sickle-cell haemoglobin C disease, two from sickle-cell anaemia (ss) and one from pure haemoglobin C disease. The blood of 18 subjects showed the presence of the sickle-cell trait and the pathology of a number of these patients resembled that described in the sickle-cell crisis (Edington, 1955). Further research on this problem is indicated.

(*d*) *Tumours.*—294 tumours were sectioned and 154 were found to be malignant. Carcinomas were most common and were distributed as follows: cervix uteri (14), breast (7), bladder (7), salivary glands (7), stomach (5), prostate (5), rectum (4), colon (2), liver (2) others (13).

(viii) DISEASES OF THE CARDIOVASCULAR SYSTEM

Aneurysm was once again the most common cause of death. Three cases of endomyocardial fibrosis were seen—in one the right ventricle was almost completely obliterated by an organising thrombus. The occurrence of five cases of mitral stenosis is of interest. Although no typical Aschoff nodes were seen, on histopathological examination a collaginosis was present suggesting a rheumatic aetiology. It has previously been stated that mitral stenosis is rare in the Gold Coast (Edington, 1954)—this conclusion may require modification in the future. Once again the absence of coronary thrombosis is noteworthy.

(ix) PARASITOLOGY

The number of investigations performed rose from 22,318 in 1954 to 25,773 in 1955. A possible microfilaria in a blood film was submitted for identification and was found to be a spore of a helicosporous fungus described by Norman and Donaldson (1955) Amer. J. Trop. Med. Hyg. *4*, 889.

CHAPTER VII

THE GOVERNMENT CHEMICAL LABORATORY

The year 1955 was one of improvements for the Government Chemical Laboratory. For the first time for nearly ten years two of the three establishments for graduate chemists were occupied and consequently the services of the laboratory were available for the whole of the year as opposed to only rather more than six months during 1954. Much needed improvements to the buildings were effected by the Public Works Department to specifications. The main room was completely redecorated and supplied with new laboratory furniture; the dark room englarged and fitted with a concrete bench; the old store room attached to the main laboratory demolished and replaced by a new and larger room; and a fume chamber installed in a small extension to the main room. The second laboratory was almost completely redecorated and minor improvements made and it is hoped that funds will be available for the completion of the work in the near future. During the six-months period while these alterations were being done, the work of the laboratory was carried on at the Osu Fisheries Station through the courtesy of Mr. F. R. Johnson, M.B.E., the Chief Fisheries Officer, who not only offerred the use of his laboratory but also assisted in many other ways. The Government Chemical Laboratory in Seventh Avenue was re-occupied at the beginning of July.

The work of the laboratory in 1955 again covered a wide range. As well as the usual large volume of work carried out for the Commissioner of Police and the Comptroller of Customs and Excise, the following government departments made use of the laboratory facilities:— Animal Health, Agriculture, Electricity, Forestry, Post and Telecommunications and Social Welfare. Assistance was also given to the Military Forces, the Industrial Development Corporation, Sir William Halcrow and Partners, and to a number of commercial undertakings. The Government Chemist was a member of the Government's Board of Enquiry concerned with the alleged pollution of the Jimi River (and other rivers) by effluents from the mines of the Ashanti Goldfields Corporation. This entailed four visits to Obuasi and a considerable amount of laboratory work. A technical contribution was made to the Board's Report.

Forensic work included the examination of nearly one hundred specimens of Indian Hemp connected with twenty cases—rather less than half the official figure for the total number of cases reported. (It is only in cases where suspects plead not guilty that specimens are submitted for examination). Other Police cases included the examination and analysis of exhibits connected with political shootings in Ashanti; forged currency notes; two cases of poisoning by the use of cyanide and one case of trial by ordeal in which " Sassy bark " was used as the poison. The annual lecture was given to the Police Inspectors Promotion Course.

Customs work followed the usual lines and a large variety of imported goods were examined. Whilst the analyses of wines, spirit, beers, tinned milks, etc., are routine jobs, considerable time had to be spent on other and more complicated samples such as textiles.

Over one hundred samples of Volta River water taken from a number of places between the bar at Ada and Bakpa-Adidomi, at various depths, were tested for salinity for Sir William Halcrow and Partners. This meant that special sampling apparatus had to be constructed; it is believed to be the first time that salinity variations in the water have been investigated. The sampling period covered two months. Some assistance was also given in total evaporation tests—an important factor in many respects if the river is to be dammed.

Certain work undertaken for the Chief Conservator of Forests may prove to be the beginning of an extensive series of investigations. The work has to do with minor forest products of possible economic value.

The fact that commercial firms are able to seek the advice and services of the laboratory appears to be appreciated and during the year work carried out at the laboratory enabled successful action to be taken against the local infringement of a registered trade-mark. (Several thousand pounds worth of business had already been lost through the illegal use of the trade-mark belonging to a well-established company). Compensation was obtained out of court on the strength of analyses done at the laboratory. A leading oil company requested assistance during the course of the year. Visits were paid on behalf of Imperial Chemical Industries to a large timber mill to investigate difficulty they were having with some of their plant, and to an oxygen manufacturing plant at Obutu—the first of its kind, to the best of my knowledge on the West Coast of Africa. Samples from the plant were analysed at the request of the Engineer in charge. The erection and operation of such a plant was, I think a remarkable achievement.

Once again, members of the Botany Department, University College of the Gold Coast, have rendered valuable assistance in the identification of plant material. Contact has also been maintained with the Chemistry section of the University, and with the West African Science Association.

CHAPTER VIII

THE TUBERCULOSIS SERVICE

The advent of a full-time medical officer in charge of the tuberculosis wards at the Gold Coast Hospital saw the development of a more adequate chest service in Accra. An X-Ray screening set was installed in the main consulting room in the tuberculosis block. It proved invaluable in the control of cases of artificial pneumothorax and pneumoperitoneum. It was also used for the screening of contacts. There was an average of 65 in-patients throughout the year. The number of out-patient treatments given in the first quarter of 1955 was 3,525. This increased to 4,794 in the last quarter.

Beds were also available for cases of tuberculosis in the Princess Marie Louise Hospital Accra, Cape Coast Hospital, Sekondi Hospital, Ankaful Leper Settlement, Ankaful Prison Hospital and the Mental Hospital Accra. These were visited regularly by the Tuberculosis Specialist, who also held monthly out-patient clinics at Cape Coast and Sekondi. Owing to lack of beds it was not possible to develop Kumasi as had been hoped. Visits were made to a number of out-stations for consultation, particularly to Worawora, Mpraeso and Agogo where there are Mission Hospitals treating tuberculosis.

Talks were given by the Tuberculosis Specialist to a number of societies including the Young Women Christian Association, The Gold Coast Women's Federation and the Gold Coast Women Traders Association.

A tuberculosis block was planned for the Mamprusi Borstal Institution.

Tuberculin testing of Accra school-children continued and valuable information was obtained.

The Mobile X-Ray Clinic completed surveys at the following centres:—

> Gold Coast Hospital and Nurses Training College, Nima, Mampong-Akwapim, Tsito and Anyarawasi, Alardjo, Kibi, Akrokerri, Ankaful Leper Settlement and Prison Hospital, Aburi Girls' Secondary School, Gold Coast National School, Accra, Cape Coast Hospital, Sekondi Hospital, Takoradi Hospital, Government Technical School, Takoradi, Achimota School, Accra, Mental Hospital, Kumasi College of Technology and Kumasi Central Hospital.

Children under five years of age were tuberculin tested, only the positive reactors being X-rayed.

A total of 18,857 persons was examined, and 168 persons showed evidence of active tuberculosis (8·9 per thousand examined). These cases were all given treatment and arrangements were made for regular follow-up.

An office to serve as headquarters was opened during the year in a room lent by the Medical Research Institute. It is hoped ultimately to house the headquarters in rooms in the projected Chest Unit to be built in the compound of the Gold Coast Hospital.

CHAPTER IX

X-RAY SERVICES

During 1955, the number of cases examined was 26,742 as compared with 21,476 in the previous year.

Apart from the main centre at the Gold Coast Hospital, there are nine stations in operation, namely, Kumasi, Sekondi, Takoradi, Cape Coast, Winneba, Tarkwa, Tamale, Dunkwa and Bolgatanga. A shortage of staff necessitated the closing down of the Takoradi station late in the year, and prevented the opening of new stations at Ho and Keta.

The Staff consisted of:—

1	Specialist Radiologist.
1	Superintendent Radiographer.
2	Senior Radiographers—one of whom left the service during the year.
6	Radiographers—one on a temporary basis.
10	X-Ray Assistants—six of whom resigned during the year.

In spite of continued advertisement no Radiologists have shown any inclination to assume service here, and it now seems advisable that some encouragement should be given at the earliest possible date to newly qualified African doctors to take up the speciality. At least three radiologists are required.

Of the pupils in training during the year as mentioned above, six have resigned.

Supplies of X-Ray films were on the whole regular and adequate, and it is expected that the measures recommended for cold storage will be implemented at an early date.

It is expected that the new X-Ray and Physiotherapy Department at the Gold Coast Hospital, Korle Bu, commenced during the year, will be ready for opening either late in 1956 or early in 1957.

The X-Ray Section of the new Out-Patient's Department at Effia Nkwanta Hospital, Sekondi, was nearly completed during the year.

The position regarding equipment was generally satisfactory. The Chief X-Ray Maintenance Technician paid visits to the various stations during the year.

Early in the year Mr. A. Q. Davies, X-Ray Technician Grade I, proceeded to the United Kingdom to pursue a course of training in construction and maintenance of X-Ray Apparatus.

One of our scholars, Mr. Ephson, who successfully completed his final examinations in radiography received a very commendable report from the Director of the Radiological Department, Bristol University on the excellence of his work, and has been recommended for a short course in tutoring.

A summary of the radiographic work done in the various X-Ray departments is shown in the table reproduced on page 40. There was a general increase in the amount of work done during the year. At the Gold Coast Hospital 2,263 more cases were X-rayed and for the whole country the number was 5,266.

SUMMARY OF RADIOGRAPHIC WORK DONE—1955

Examinations	Accra	Sekondi	Kumasi	Tarkwa	Cape Coast	Takoradi	Winneba	Tamale	Bolgatanga	Dunkwa
Chest	7,518	2,053	1,685	192	643	161	201	327	189	77
Barium Meals	192	15	172	3	8	26	3	3	1	2
Barium Enema	31	7	74	Nil	6	3	1	2	4	Nil
Renal Tracts	39	Nil	90	Nil	34	9	Nil	1	5	Nil
Gall Bladder	26	Nil	83	Nil	1	13	1	Nil	1	2
Abdomen (Pregnancy, etc.)	130	51	96	37	15	10	10	39	8	8
Sinuses (Location of) ...	317	12	124	4	37	23	6	4	4	Nil
Salpingograms	31	26	4	Nil	4	Nil	Nil	Nil	1	Nil
Bronchograms	23	Nil	4	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Dental	131	164	98	4	18	11	Nil	47	5	Nil
General (Fractures, etc.)	4,360	1,608	2,906	250	653	266	297	571	412	189
Total	12,798	3,936	5,336	490	1,419	522	519	994	630	27

European Male	345	91	708	7	32	305	30	51	12	10
European Female ...	177	36	454	2	17	114	5	13	4	7
African Male	7,149	2,975	1,633	318	701	92	292	678	495	190
African Female	5,127	834	2,568	163	498	11	192	252	119	71

CHAPTER X

THE SPECIALIST ANAESTHETIST'S DEPARTMENT

Work during this year was curtailed by the absence of the Specialist Anaesthetist on vacation leave from April 13th to October 4th, this was reflected more in the kind of cases dealt with, rather than with the total number. Training of nurses to administer anaesthetics also had to be stopped.

Staff :—

Specialist Anaesthetist
Medical Officer who acted during the Specialist's leave.
A varying number of Nurse Anaesthetist at times two, at other times six.

The total number of anaesthetics given amounted to 4,534. In addition a number of very minor cases had to be given anaesthesia. There were about 100 of these at the Gold Coast Hospital and 136 at the Ridge Hospital.

Deaths directly attributable to anaesthesia were four. Deaths in which anaesthesia was an important factor cannot truly be assessed as in so many cases no post mortem examination was performed.

Anaesthesia was administered for all branches of Surgery and in a few cases for relief of pain (local nerve block).

A hitch in the supply of drugs occurred towards the end of the year but emergency ordering and local purchases managed to smooth over what might have been a difficult time.

The Specialist inspected the work of all Nurse Anaesthetists throughout the country during the first three months of the year and put them all through a practical test. Those successful were to continue in the work, others were to revert to general nursing duties.

An establishment of 25 Nurse Anaesthetists to staff all hospitals satisfactorily was prepared. There were just enough personnel to go round leaving an insufficient reserve for illness, retirements, etc. More will be required during 1956.

CHAPTER XI

THE MENTAL HOSPITAL

Staff

The administration and general running of the country's only Mental Hospital situated in Accra was carried out during the year by a Specialist Psychiatrist assisted by a Medical Officer.

The senior staff of the hospital consisted of the following:—

(*a*) Psychiatrist Specialist
(*b*) Medical Officer
(*c*) Chief Male Superintendent
(*d*) Matron Superintendent
(*e*) Occupational Therapist.

The above senior staff were supported by a team of junior officers and consisted of:—

1	Chief Mental Nurse Grade I
4	Chief Mental Nurses Grade II
10	Senior Mental Nurses
82	Staff Mental Nurses
36	Pupil Mental Nurses
5	Clerks
1	Dispenser Grade II
1	Laboratory Assistant.

Other subordinate staff include 11 tradesmen employed at the occupational therapy department, one lodge keeper, one female kitchen supervisor, three male cooks, 14 female cooks, 11 male labourers, two female labourers and two office messengers.

In addition, the Chief Hospital Welfare Officer does a great deal of work at the hospital. There were no invalidings. One death occurred—Mr. G. N. Aketo, Senior Mental Nurse who had been a mental nurse in the institution for 24 years.

Resident Patients

The total number of patients resident in the hospital on 1st January, 1955 was 1,030. The total number of mental patients admitted during the year was 604. The daily average number of patients in the institution was 1,110. There were 1,189 patients on 31st December, 1955.

Hospital Premises

A female rehabilitation ward was opened during the year. This was a conversion of the old male isolation ward. Eight patients are accommodated in the ward which has afforded some opportunity to segregate the improved female patients from the rest. A new dormitory was completed in the female yard, and another dormitory in the general yard. There were 272 beds in the previous year. New beds added during the year totalled 59. Bed deficiency therefore is considerable.

Sanitation in the hospital continues to be the same as in the previous year. The construction of the sewage disposal plant is well advanced and it is hoped it would be completed soon.

Paying Unit

This hospital has not been a paying unit, but owing to the popularity of the voluntary system of admission, a small fee of 1s. and 2s. 6d. per diem has been charged to patients who have requested ordinary diet or special diet respectively.

There was marked improvement in the quality and quantity of diets provided. This was the result of the recommendations made by the Assistant Nutrition Officer.

Work Done

The various forms of mental disorders seen as far as they were diagnosed are shown hereunder:—

Idiots and Imbeciles	2
Chronics and presumably irrecoverable	411
Suicidal	8
Sick and Infirm	50
Epileptics	52
Senile dementia	101
Able bodied	565

195 patients were treated by electrical convulsive therapy during the year. 116 improved and 79 remaind not improved.

Causes of death amongst the Inmates were:—

1.	Cachexia	11
2.	Cardio vascular failure	77
3.	Thromobosis of sinus cavernosus	2
4.	Oedema of glottis	1

Causes of death amongst Inmates—*contd.*

5.	Toxaemia	5
6.	Chronic dysentery	2
7.	General debility	5
8.	Cerebral Oedema	2
9.	Pulmonary tuberculosis	13
10.	Primary carcinoma of Liver	1
11.	Liver failure	2
12.	Broncho pneumonia	4
13.	Concussion	1
14.	Chronic encephalitis	1
15.	Malaria	7
16.	Unknown	1
17.	Gastro enteritis	2
18.	Status epilepticus	3
19.	Lung abscess	1
20.	Chronic nephritis	1
21.	Toxicosis with cardio vascular failure	1
22.	Typhoid fever	2
23.	Causes of deaths not yet known (Post mortem examination performed)	5
		150

52 patients were sent to the Gold Coast Hospital for X-Ray examination of the following:—

Chest	35
Dislocation	1
Fracture	12
Sprain	2
Throat	1
Cervical spine	1

Improvements

A small canteen was opened for the use of the patients but the staff were allowed to make purchases there. A new laundry was completed and put to use. The kitchen was extended to cope with the increased number of patients.

TABLE ONE

ATTENDANCE OF INMATES AT INFIRMARY AND AT OUT-PATIENTS DEPARTMENT

	Number of In-patients treated in the Infirmary				Number of New Out-patients treated			
Year	Male	Female	Children under 16	Total	Male	Female	Children	Total
1951 ...	330	73	—	403	1,085	582	—	1,667
1952 ...	354	60	—	414	740	1,056	—	1,796
1953 ...	461	66	—	527	458	351	—	809
1954 ...	431	94	—	525	436	245	—	681
1955 ...	626	159	—	785	810	473	—	1,283

TABLE TWO

TOTAL ATTENDANCES OUT-PATIENTS

Year	Male	Female	Children under 16	Total
1951	6,157	3,272	—	9,429
1952	1,321	2,256	—	3,577
1953	711	527	—	1,238
1954	494	308	—	802
1955	1,058	625	—	1,683

The above figures show the distribution of the admissions for the past five years. There was an over-all increase in 1955 over 1954 by 260 admissions, of which 65 were females and 195 males.

This distribution was significant as an indication of the relative situation of stress operative in the various environments. Owing to the various reforms taking place in the Gold Coast and the numerous development schemes, there has been an unrestricted migration from and into the different regions. Some of these migrants who left the shelter and security of their homes, have not been able to adapt themselves satisfactorily to their new environments and in the face of severe and unresolved stresses, have broken down.

Of the total admissions for 1955, 172 were criminal admissions and 131 were admissions on voluntary basis. The voluntary admissions showed an increase of 61 over the previous year. It is gratifying that quite a number of patients now come to the hospital of their own accord for admission for treatment. This situation did not exist in the previous years when the mental hospital was regarded as a mad house from which few if any were discharged. This patronage of the voluntary system of admissions, reflects the change of attitude of the general public towards mental disorders. The public are gradually, as before, being educated to regard mental disorder as an illness or rather, a disease which at certain stages could benefit from medical treatment.

During the year 223 patients were discharged from the institution and returned into society through their relatives and friends. Escapes totalled 72.

The form of treatment employed during the year consisted mainly of electro-shock. A total of 195 patients received this form of treatment, 116 patients were improved and 79 patients remained not improved. During the previous year 177 patients were subjected to this form of treatment.

In addition to the electro-shock therapy, group therapy was continued as in the previous year.

During the year trials were continued to assess the therapeutic value of certain drugs alleged to be of benefit in psychiatric practice.

The following drugs were used:—

(1) Mysoline
(2) Largactil
(3) Serpasil

There was a shortage of mysoline. 16 epileptics whose ages ranged from 18 to 56 years were treated with mysoline for periods varying from 10 to 14 months. These patients were all psychotic and their mental illness was associated with grand mal-epilepsy.

A total of 193 patients were tried on largactil. Of these 80 were females: 16 improved. Of the 113 males, 15 improved. It was discovered that the drug was most useful in curbing behavioural disorders and rendering the patient more amenable to other forms of treatment. Very few patients were tried on serpasil.

(9) COMMITTEES AND STAFF RELATIONS

In all 12 meetings were held by the Hospital Consultative Committee and discussions were on the whole cordial.

The Hospital Visiting Committee held three regular meetings during the year at which various matters concerning the improvement of the Mental Hospital were dealt with. It was noted that there had been considerable improvements to the hospital during the year. Much more however remained to be done.

(10) OCCUPATIONAL THERAPY DEPARTMENT

The services of a trained occupational therapist was secured during the year. He was assisted by a Chief Mental Nurse Grade II. Much valuable work was done by this department during the year. There was an exhibition and sale of articles made by the patients in August, 1955. Sports and soccer figured prominently during the year. The patients engaged on various industries showed much interest in this aspect of mental training. The sales of articles produced by the patients amounted to nearly £600, about £52 more than in the previous year.

CHAPTER XII

THE EAR, NOSE AND THROAT DEPARTMENT

GENERAL

On the whole, a year of good progress can be reported in the Ear, Nose and Throat Department. All the instruments ordered have arrived, including the audiometer which is of great value in assessing deafness.

The Ear, Nose and Throat Specialist went on leave from July until October and was able to see new instruments and to visit several centres and clinics in the United Kingdom.

The Specialist undertook a rapid tour of schools in the Northern Territories in the month of February, 1955. Very little ear and throat infection was found among school children, and practically no tonsillar or adenoid enlargement. In figures, about 1 per cent. of children were affected. As representative schools were visited in Kumasi, Mampong, Tamale, Bolgatanga and Navrongo, covering about 3,000 school children, this state of affairs is probably true all over the country. From this tour, it was deduced, probably with not sufficient evidence, that the streptococcus which in Europe causes severe throat infections does not flourish in the Gold Coast possibly owing to the sunshine or warmth. Disagreement with the Bacteriologist in the Medical Research Institute led to a trial test of throats in 100 school children in Accra in which 2 per cent. only were found to be infected, thus bearing out to some extent, the findings of the tour.

A clinic is now held every day in Accra and the average attendance is 25. There was a high proportion of cases with severe sinusitis and many of these patients required the radical Caldwell-Luc operation. An increasing number of cases of this condition is now being seen at the clinics, and it would seem desirable to make a detailed study of this problem. A number of operations on jaw tumours were also carried out as cases presented themselves and very encouraging results were obtained.

Five beds for adults and an unspecified number for children have been allocated to this unit at the Gold Coast Hospital and although there has been no waiting list for " cold " cases, these beds are inadequate for the in-patient work required to be done and it is hoped the position would improve in the near future.

DEAFNESS

Co-operation has now been gained with Amplivox, of London, for the supply of hearing aids to patients who require them and are prepared to pay the cost ranging from £25 to £50. There is surprisingly little acquired adult deafness in the Gold Coast or at least, so far not much has come forward. As regards the congenital deafness of childhood, enquiries have been, and are still being made concerning the possibility of founding a school for the deaf.

Through the kindness and co-operation of the Department of Social Welfare, a rapid survey has been made of all the larger centres of population in a search for deaf and dumb children. It was expected that anything up to 1,000 would be found in a country of this population, but somewhat surprisingly not more than 5 or 6 were discovered. An additional figure of 4 have been seen at Korle Bu.

ALLERGY

An allergic diseases' clinic is planned to start at Korle Bu. A firm was visited in London which supplied all the extracts needed for skin tests and a hospital size set has been ordered.

VISITS TO OUTSTATIONS

A Saturday clinic now takes place every 4 weeks in the Central Hospital, Kumasi and usually runs from 8 a.m. until 1.30 p.m. and a large number of patients are seen.

A clinic in Sekondi on a Monday, or a Thursday every four weeks has been planned but is being held in abeyance for the present.

CHAPTER XIII

THE OPHTHALMIC DEPARTMENT

During the year there were 8,393 attendances at the Ophthalmic Department of the Gold Coast Hospital, Accra. Of these, 4,261 were new cases and 4,132 were patients re-attending the department for treatment.

Amongst the various conditions seen, conjunctivitis was by far the commonest eye disease. The majority of these cases were muco-purulent, due to infection by the Koch-Weeks bacillus or by staphylococcus aureus, but a considerable proportion were of gonococcal origin, particularly in children between the ages of three and seven, and it is suggested that in these cases the infection may have been communicated to the children through the medium of infected bedclothes.

Cases of keratitis were mainly of the superficial ulcerative type associated with severe acute conjunctivitis, but a considerable number in children were due to keratomalacia, a sign of vitamin " A " deficiency. There were a few cases of superficial punctate keratitis, interstitial keratitis, and leprotic keratitis. Cases of phlyctenular conjunctivitis and onchocerciasis are not included in this group.

Trachoma is a common disease in the Accra region but most of the cases are mild, and although a moderate degree of ptosis is common, the extensive cicatricial sequelae are rarely seen.

The aetiology of many of the cases of iridocyclitis and choroiditis could not be determined, but about 30 per cent have positive Kahn tests, indicating a probable syphilitic origin.

The few cases of onchocerciasis seen occurred in patients from the Northern Territories or from the Senchi area or French Togoland.

The total number of operations performed was 277, consisting of:—

Removal of chalazion	84
Removal of pterygium	65
Extraction of cataract	34
Enucleation of eyeball	28
Needling of congenital cataract	28
Tarsectomy	9
Excision of iris prolapse	8
Corneo-scleral trephining	6
Evisceration of eyeball...	6
Iridectomy	3
Strabismus correction	2
Diathermy of retinal detachment	2
Excision of conjunctival papilloma	1
Excision of conjunctival naevus	1

The number of cases admitted as in-patients was 210. Many more patients would have benefited by in-patient treatment, but were precluded from this by the shortage of beds.

CHAPTER XIV

MATERNAL AND CHILD WELFARE SERVICES

Maternity Care

(*a*) *Hospitals*

There are two main maternity units providing specialist maternity services. These are the Maternity Hospital, Accra, and the maternity unit of the Kumasi Central Hospital. Added to these are maternity units attached to almost all Government and government sponsored Mission Hospitals throughout the country.

In Accra, both antenatal and postnatal cases suffering from a variety of conditions were admitted. Amongst the antenatal admissions were women suffering from malaria (153 cases) bacillary dysentry (10 cases) amoebic dysentry (7 cases) and pneumonia (18 cases). With the improvement of the accommodation position at the Gold Coast Hospital, the admission of these cases to the Maternity Hospital should cease.

The table below gives the number of deliveries in Government Hospitals during the year. It will be noted that out of a total of 4,571 births there were 556 still-births out of which 275 were cases from Accra.

ANALYSIS OF DELIVERIES

Cases	Births		Maternal Deaths
	Live	Still	
Single Deliveries	3,654	478	71
Twin Deliveries	350	75	1
Triplet Deliveries	11	3	—
Total	4,015	556	72

The causes of neonatal deaths at the Accra Maternity Hospital from where the majority of still-births (275) were recorded are shown in the following table. There were 66 neonatal deaths due to prematurity. Facilities for the care of premature babies are inadequate and plans have been made to start a premature baby unit under the care of a trained nursing sister.

CAUSES OF NEONATAL DEATHS—ACCRA

(1) *Asphyxia:*		141
(2) *Prematurity*		66
(3) *Intra-cranial haemorrhage*		46
(4) *Pneumonia:*		
(*a*) Bronchopneumonia ...	5	12
(*b*) Inhalation	7	
(5) *Haemorrhagic disease of new born*		25
(6) *Congenital malformation:*		
(*a*) Atresia of small intestine	1	9
(*b*) Hydrocephalus	4	
(*c*) Others	4	
(7) *Atelectasis*		38
(8) *Gross anaemia*—origin undetermined		1

Tables XXIII to XXVIII give the position regarding antenatal conditions, normal deliveries, obstructed and complicated labours with operative delivery, intra-partum complications, post-partum admissions and neonatal conditions treated at the maternity unit of the Kumasi Central Hospital.

Table XXIX gives a detailed analysis of deliveries at the Maternity Hospital, Accra.

(*b*) *Clinics*

Maternity clinics are held in various centres throughout the country and are established either by local authorities or private midwives. They are well patronised.

Supervision of these clinics is done as far as possible by the regional Superintendent of Health Visitors.

(*c*) *Dressing Stations*

The table below records the number of women attending district dressing stations for medical aid in respect of pregnancy, childbirth and puerperium. These dressing stations which are mostly local authority sponsored, are for the most part run by dressers who have received no specific training in handling conditions arising out of the pregnant state, but medical officers and midwives visit some and hold clinics therein. It will be observed that the major centre of activity was the Trans-Volta Togoland Region due mainly to a cold response by the other regions to submit their returns.

MATERNITY ACTIVITIES OF DRESSING STATIONS

	No. of Pregnant Women seen	No. of Deliveries	Haemorrhage during Pregnancy and Childbirth	Other complications of Childbirth
Accra	—	—	—	—
Trans-Volta Togoland	2,478	773	61	9,916
Eastern	218	6	3	—
Western	—	—	—	—
Ashanti	322	—	7	—
Northern Territories	34	—	—	—
Total	3,052	779	71	9,916

(*d*) *Red Cross Clinics*

The main Red Cross centres are Cape Coast in the Western Region and Koforidua in the Eastern Region. Activities in the Eastern Region were confined to Koforidua and its immediate surroundings. Ante-natal cases seen at this clinic totalled 8,031. A mobile ante-natal clinic was also run for the women of Huhunya though it was very poorly attended. There were no ante-natal activities reported from the Western Region.

Child Welfare

One child welfare centre was established in Accra and another in Kumasi over a quarter of a century ago. These centres are now functioning as hospitals though originally they were intended for dealing with problems of malnutrition in children.

These hospitals work under considerable pressure. The total number of cases admitted for 1955 in both hospitals was 670, and 35,828 were treated as outpatients. The conditions most frequently met with in out-patients were:—

1. Malaria	7,311
2. Unspecified Dysentery	4,911
3. Skin infections	2,959
4. Other diseases of digestive system	2,219
5. Round Worms	2,168
6. Kwashiorkor	1,109

Health Visiting Service

(*a*) *Staff*

The Staff consisted of:—

1 Senior Superintendent of Health Visitors
1 Health Visitor Tutor
5 Superintendents of Health Visitors
3 Junior Superintendents of Health Visitors
9 Health Visitors
2 Temporary Assistant Health Visitors
8 Health Visitors in training.

The health visiting unit lost two Superintendents of Health Visitors and one Junior Superintendent of Health Visitors during the year but the junior staff was increased when six health visitor trainees passed their examinations. Many more health visitors are needed, however, if the work is to be really effective.

Health Visitors have had to be posted either singly or in pairs to various stations and only the minimum number have been kept in Accra and Kumasi. This has meant that the existing services in those towns have been inadequately maintained.

The private midwives in the rural areas have continued to co-operate in running child welfare clinics. As their knowledge of this work is limited the Superintendents of Health Visitors have visited these clinics as often as possible to help and advise and have thus been able to supervise the health of more children under five years of age than would otherwise have been possible.

Supplies of skimmed milk powder and of evaporated milk have improved and have proved very valuable at the clinics for cases of undernourishment and malnutrition.

The routine inspection of private midwives has been carried out every month and of dressing stations and dispensaries quarterly.

(*b*) *Health Visitor Training*

Six nurses completed their training in September and, after leave, were posted to districts where they have settled down and are showing interest in their work.

A new training course was started with eight trainees but both teaching and study have been made extremely difficult by the noise emanating from nearby building operations. There have also been difficulties in getting suitable lecturers for trainees with the S.R.N. qualification.

Consideration will have to be given to the provision of more suitable accommodation for the health visitors in training and their tutor if this training is to continue.

(*c*) *Work in the Regions*

(*i*) *Accra Region*

A fair number of health visitors have been kept in Accra in an attempt to maintain a fairly comprehensive training field for the health visitor trainees, but their numbers are very inadequate for the work to be done.

Some areas in the municipality are still not visited and the numbers of domiciliary visits is rather low. However, the health visitors do their best. 18 child welfare clinics are conducted weekly and motherless children, malnutrition and special cases are visited regularly.

Attendances at the child welfare clinics are good, but all the premises are borrowed and most of them are entirely unsuitable. Properly constructed welfare centres are required in strategic parts of the town ; this would encourage the staff and enable the public to make more use of them.

School inspections were carried out during part of the year, mostly by the health visitors in training. A total of 1,210 children were examined in seven schools. The schools minor ailment clinic was opened every morning with an average monthly attendance of 132 children.

The Day Nurseries in the town were also visited regularly by the health visitors.

Domiciliary Visiting

Total number of visits 0–5 years	14,582
Special visits—including tuberculosis and other infectious cases	3,532

Child Welfare Centres

Number of children on register	13,233
Total number of attendances	82,662

(*ii*) *Eastern Region*

Three different Superintendents of Health Visitors were posted to Koforidua during the year and there was little continuity.

There are a total of fourteen child welfare centres in the region five of which are conducted by midwives in the outlying areas, and it is essential that these midwives are visited frequently.

The health visiting staff are also responsible for the smooth running of the Red Cross clinic in the town, and the health visitor has had little time for routine home visiting but has concentrated on special visists e.g. orphans and cases of malnutrition. Some routine visits have been made by the Red Cross staff who have also helped at the child welfare centres in the town.

Total number of domiciliary visists	6,077
Total attendances at child welfare centres	19,984

(*iii*) *Western Region*

Work in this region remains very much undeveloped and owing to restrictions on transport the Superintendent of Health Visitors has had to confine herself to supervision of the Red Cross clinic and of practising midwives.

A health visitor was posted to Cape Coast in December and will undertake domiciliary visiting and encourage interest in child welfare clinics.

(*iv*) *Ashanti Region*

Kumasi

There is still a shortage of staff in Kumasi although the situation is better than it was last year.

Three new child welfare clinics have been started making a total of 15, but some parts of the town remain unvisited and it has been quite impossible to start school health supervision again.

Some of the Kumasi midwives have helped considerably by assisting at the child welfare clinics themselves or by providing voluntary helpers, and the attendance has been very good.

As in Accra, some of the clinics are held under very unsuitable conditions and the provision of proper centres is desirable.

Total number of domiciliary visits	11,599
Total attendances at child welfare clinics	40,229

Rest of Ashanti

Two Superintendents of Health Visitors have been working in Ashanti throughout the year and all practising midwives have been regularly visited. Some of the midwives have been established some years but others tend to move from place to place without giving themselves time to get established.

The local council maternity homes are satisfactory on the whole though water supplies are often inadequate and local councils do not seem to appreciate that buildings need maintaining and equipment replacing.

There are about 33 child welfare clinics now in Ashanti, they are conducted by the midwives who work well on the whole but need a great deal of supervision and encouragement.

A health visitor was posted to Sunyani in November and another to the Effiduasi Health Centre. They are responsible for child welfare clinics and undertake home visiting in addition to giving talks and demonstrations. The mothers appear interested and are beginning to understand that the clinics are not intended for sick children.

Total number of domiciliary visits	560
Total attendances at child welfare centres	35,071

(*v*) *Trans-Volta Togoland Region*

A health visitor was posted to the Kpandu Health Centre in May, 1955, to run the child welfare clinics, assist the midwife and undertake home visiting.

In addition to those at the health centre, child welfare and antenatal clinics have been held at Vakpo, Wurupong, Golokwati, Anfoe and Nkonya Ahenkro.

Child welfare centres—Total attendances	6,293
Ante-natal clinics—Total attendances	5,558

(*vi*) *Northern Region*

The Bimbilla Health Centre which was opened in 1953 continued to function well. The maternity unit was completed and put into use. Antenatal and child welfare clinics were held weekly.

Summary of Attendances

Summary of attendances at child welfare clinics and of domiciliary visits made by the health visitors for the year ended 31st December, 1955:—

	Attendances at Child Welfare Clinics	*Domiciliary Visits*
Accra	82,662	22,267
Eastern Region	19,984	6,077
Kumasi	40,229	11,559
Rest of Ashanti	35,071	560
Western Region	5,170	—
Trans-Volta/Togoland Region ...	6,293	—
Total	189,409	40,463

CHAPTER XV

TRAINING OF AUXILIARY MEDICAL PERSONNEL

1. *State Registered Nurses*

Training of nurses for the S.R.N. qualification continues to be carried out at the Nurses' Training College, Accra, in conjunction with the Gold Coast Hospital, at which the practical ward training is received.

As in previous years state registered nurses after finishing their training carry out duties as staff nurses after which they may proceed to take further training as midwives at the Maternity Hospital, Accra.

On qualification as midwives the majority of the state registered nurses continue to serve in the larger training schools where the more specialised work and treatment is being carried out.

Now that the Central Hospital, Kumasi, is functioning it is planned to open another centre for state registered nurse training in Kumasi, thus increasing the number of students under training.

Training position in 1955. *See* Table XXX.

2. *Qualified Registered Nurses*

This grade of nurses continues to be trained on the apprenticeship system at the Gold Coast Hospital, Central Hospital, Kumasi, Sekondi, Cape Coast, Tamale and Bolgatanga Hospitals.

With the increase in the number of state registered students there will eventually be a reduction in the number of trainees for the Q.R.N. qualification. However, in view of the expansion of the medical services and the extensions to various hospitals this will not be possible for some time yet.

3. *Mental Nurses*

A classroom for teaching purposes has now been provided at the Mental Hospital.

Training of mental nurses is now carried out under more favourable conditions as a result of the new classroom at the Mental Hospital. There has also been an increase in the number of senior staff and this should result in improved practical training. It is also hoped to obtain the services of a qualified mental tutor. Meantime the classroom training is being carried out by a Departmental Sister or Ward Sister.

Examinations

Examinations were held in January, May and September. The examination results for the year 1955 were very satisfactory and are summarised below:—

	No. of Candidates	*No. of Passes*	*No. referred*	*No. failed*
Preliminary Examination ...	183	133	43	7
Final Examination	72	62	10	—

4. *Midwives*

There are two government centres for the training of midwives. These are:—

(i) The Maternity Hospital, Accra, which trains nurses who have already qualified S.R.N. or Q.R.N.

Training has been carried out in the face of difficulties due to shortage of tutorial staff and trained midwives for the supervision of the practical ward training.

On 31st December, 1955 there were 80 pupil midwives in training at the Maternity Hospital, Accra. 46 midwives qualified in 1955 out of a total of 54 who presented themselves for examination.

(ii) *Midwifery Training School, Kumasi*

This school is open to girls who have had no previous training in nursing and is confined to girls of either Ashanti or Northern Territories origin.

On 31st December, 1955 there were 60 pupils receiving training at Kumasi. 13 midwives qualified in 1955 out of the total of 13 who presented themselves for training.

Conditions under which pupil midwives train at Kumasi have been greatly improved now that this unit has moved over to the new hospital.

5. *General Comments on Nursing Position*

During 1955 difficulties in the staffing of the hospitals were again experienced. This was due in part to the expansion of the medical services and extension of hospitals. Contributory factors were:—

(*a*) continued demands for maternity leave which is becoming a serious factor in our difficulties of staffiing the hospitals; of the 410 trained female nurses 77 applied for maternity leave, and of these 66 took their leave during the year;

(*b*) lack of suitable female trainees; this difficulty will however probably be overcome to a large extent when hostel accommodation for female trainees is made available;

(*c*) the very small number of government quarters available at practically all the hospitals for trained staff.

6. *Health Inspectors*

There are three Schools of Hygiene, situated at Accra, Kintampo and Tamale. Accra trains inspectors up to the standard required for the examination of the Royal Society of Health (West Africa) and candidates entering here have to be in possession of the Secondary School Certificate. At Kintampo and Tamale the accent is mainly on rural training and candidates entering these schools need only be in possession of the Middle School Leaving Certificate.

Accra.—The training lasts three years. During 1955 there were 41 pupils in the school at various stages in their three-year training. These were made up as follows:—

Government	36
Kumasi Municipal Council	2
Tema Development Corporation	3

The Royal Society of Health examination (West Africa) was taken by eleven candidates in 1955. Seven were successful.

The Accra school is the premier school for the training of health inspectors. It is from inspectors trained here that health superintendents are found and it is intended to maintain the highest standards even though the West African Board of the Royal Society of Health have recently reduced the educational standard required for sitting their examination.

Kintampo.—This school runs a two-year course, admits candidates with the Middle School Certificate and lays emphasis on rural practical work. Local Authorities send their pupils here for training. Only one batch of students passes through the school at a time, due to lack of accommodation. The third course which began in 1954 continued under training during the year. There were 30 students on the course, 18 from Local Authorities and 12 from Municipal Councils. A refresher course lasting a fortnight was held in May for old students. This was well attended and was a great success.

Tamale.—This school is run along the same lines as the Kintampo one but is meant primarily for candidates from the Northern Territories. Due to the general lack of schools in the north and the shortage of suitably educated pupils it is difficult to fill all the places at this school of hygiene.

7. *Health Visitors*

The training of health visitors is also carried out in the Accra school. Six students were enrolled in 1955. Lectures were given by a variety of teachers in addition to the Health Sister Tutor. Practical work was done in the rural areas of the Colony and Ashanti. All six candidates were successful in the examination at the end of the year.

8. *X-Ray and Laboratory Assistants*

Reference is made to these in the reports of the Specialist Radiologist and the Medical Research Institute.

CHAPTER XVI

STATUTORY BOARDS

1. THE PHARMACY AND POISONS BOARD

The Board held ten meetings during the calendar year 1955. Matters dealt with included the following:—

(i) Twenty-seven external pupil pharmacists were examined for the award of Certificate of Competency. Ten were awarded Certificates.

(ii) Following disciplinary enquiries, the Board revoked the licences of nine persons—holders of licence to sell poisons classified under Part 2 of the Poisons list.

(iii) Three registered pharmacists were removed from the roll, one for unlawful dealing in scheduled drugs and poisons, one for not keeping record of poisons supplied, and one for illegal practising of medicine.

(iv) One of the pharmacists mentioned in para. (iii) above re-sat the Pharmacy Board Examination and passed.

(v) One registered pupil pharmacist was removed from the register by the Board after having been convicted for offences committed under Chapters 69, 70 and 71 respectively of the Laws of the Gold Coast on different occasions.

(vi) The Board removed the name of a pharmacy premises under the control of a registered pharmacist for being unsuitable.

(vii) Six registered pharmacists were severely reprimanded in consequence of court convictions for offences committed by them under the Pharmacy and Poisons Ordinance.

(viii) Petitions from ex-registered pharmacists and ex-pupil pharmacists requesting restoration of their names to the register were dealt with.

2. THE NURSES BOARD

The composition of this Board remained unchanged during the year. Four meetings were held in February, March, July and December.

Eight disciplinary cases were considered by the Board during the year, with the following results:—

5 names were removed from the register
2 nurses were suspended
1 nurse was censured.

3. THE MIDWIVES BOARD

Two disciplinary cases were considered by the Board during the year, with the following results:—

1 midwife was censured
1 midwife was suspended from practice.

APPENDIX A

VISITORS TO THE MINISTRY OF HEALTH

(1) Professor A. W. Woodruff, Member of Colonial Research Council.
(2) Colonel A. J. Lotte, Director of Medical Services, French Togoland.
(3) Mr. P. C. O. Isaac, Senior Lecturer in Public Health Engineering, Department of Civil Engineering, University of Durham.
(4) Dr. W. E. Kershaw, Secretary of Helminthiasis Sub-Committee, Colonial Medical Research Council.
(5) Dr. Alderdice, Medical Superintendent, Mulago Hospital, Kampala, Uganda.
(6) Dr. J. Gillet, Director of Hygiene Services in Bukavu, Belgian Congo.
(7) Dr. E. B. Weeks, Malaria Consultant, W.H.O. Headquarters, Geneva.
(8) Miss F. N. Udell, O.B.E., Chief Nursing Officer and Adviser, Colonial Office, London.
(9) Professor R. Bradlaw, Dean of Dental Faculty, University of Durham.
(10) Dr. A. M. Wilson Rae, Deputy Chief Medical Officer, Colonial Office, London.

APPENDIX B

SPECIAL CONTRIBUTORS TO THE ANNUAL REPORT—1955

Name	Qualification	Rank	Reference
Dr. D. Scott	M.A., M.B., Ch.B., D.P.H., D.T.M. & H.	Specialist Epidemiologist	Chapter V
Dr. G. M. Edington ...	M.D., Ch.B., D.T.M. & H., D.C.P.	Specialist Pathologist ...	Chapter VI
L. F. U. Wix	B.Sc., A.R.I.C.	Government Chemist ...	Chapter VII
Dr. W. Pointon-Dick ...	M.R.C.S., L.R.C.P.	Tuberculosis Specialist ...	Chapter VIII
Dr. A. B. Brereton ...	M.B., Ch.B., D.M.R. & E. ...	Specialist Radiologist ...	Chapter IX
Dr. H. P. Graham... ...	M.B., B.S., D.A.	Specialist Anaesthetist ...	Chapter X
Dr. E. F. B. Forster ...	M.A., M.D., D.P.M.	Specialist Psychiatrist ...	Chapter XI
Dr. J. B. David	M.B., Ch.B., F.R.C.S., D.L.O.	Ear, Nose and Throat Specialist.	Chapter XII
Dr. C. M. McLean ...	M.B., Ch.B., D.O.M.S., R.C.P. & S.	Ophthalmic Specialist ...	Chapter XIII
Dr. R. H. O. Bannerman	M.B., B.S., M.R.C.O.G. ...	Specialist Gynaecologist	Chapter XIV Part I
Miss M. E. Gregory ...	S.R.N., S.C.M., H.V.(Cert.) ...	Senior Superintendent of Health Visitors.	Chapter XIV Parts 2 & 3.

APPENDIX C (TO CHAPTER I)

Table I

ESTIMATED NON-AFRICAN POPULATION OF THE GOLD COAST MID-1955 *

Origin	Males		Females		Total		
	Under 15 Years	15 Years and Over	Under 15 Years	15 Years and Over	Under 15 Years	15 Years and Over	All Ages
British	1,050	5,140	760	2,570	1,810	7,710	9,520
Other European ...	100	1,050	80	360	180	1,410	1,590
Lebanese and Syrian ...	320	930	320	550	640	1,480	2,120
Other Asiatic	40	360	40	70	80	430	510
U.S.A.	30	140	30	110	60	250	310
Others	—	20	—	10	—	30	30
	1,540	7,640	1,230	3,670	2,770	11,310	14,080

* Estimated total population of the Gold Coast mid-1955: 4,620,000.

Table II

OCCUPATIONS OF NON-AFRICAN MALE RESIDENTS AGED 15 YEARS AND OVER DECEMBER, 1954

Agriculture, forestry, fishing	518
Mining and quarrying	930
Manufacturing	91
Construction	817
Electricity, water and sanitary services	83
Commerce	2,191
Transport, storage and communication	343
Civil and Armed Services and Professions	2,207
Total	7,180

TABLE III

DISTRIBUTION OF REGISTERED BIRTHS AND DEATHS BY REGIONS, 1955

Region	Number of Registration Areas 1955	Population of Registration Areas 1955	Births			Deaths		
			Males	Females	Total	Males	Females	Total
Eastern and Western ...	21	366,138	8,419	8,263	16,682	4,222	3,280	7,502
Togoland	3	23,247	414	438	852	308	285	593
Ashanti	8	112,658	2,008	2,012	4,020	1,449	987	2,436
Northern Territories	4	32,391	431	460	891	644	464	1,108
Total	36	534,461	11,272	11,173	22,445	6,623	5,016	11,639

TABLE IV

REGISTERED BIRTHS AND DEATHS BY SEX AND RACIAL ORIGIN, 1955

	BIRTHS							DEATHS						
Year	African			Non-African			Total Births	African			Non-African			Total Deaths
	Males	Females	Total	Males	Females	Total		Males	Females	Total	Males	Females	Total	
1955 ...	11,128	11,034	22,162	144	139	283	22,445	6,587	4,992	11,579	36	24	60	11,639

TABLE V

BIRTH, STILLBIRTH, DEATH AND INFANTILE MORTALITY RATES, 1955 (REGISTRATION AREAS ONLY)

Year	Number of live births registered	Live birth rate per 1,000 living	Stillbirth rate per 1,000 live and stillbirths	Number of deaths registered	Death rate per 1,000 living	Infantile mortality rate per 1,000 live births
1955 ...	22,445	42·0	70	11,639	21·8	109

TABLE VI

BIRTH, STILLBIRTH, DEATH AND INFANTILE MORTALITY RATES IN 1955, BY REGIONS (REGISTRATION AREAS ONLY)

Region	No. of live registered births	Live birth rate	Stillbirth rate	No. of deaths registered	Death rate	Infantile mortality rate
Ashanti	4,020	35·7	122	2,436	21·6	126
Northern Territories	891	77·5	98	1,108	34·2	237
Western Region ...	6,421	48·1	64	3,227	20·7	103
Eastern Region ...	10,261	48·9	48	4,275	20·4	92

TABLE VII

REGISTERED DEATHS (ALL CAUSES) BY AGE AND SEX 1955

Age Group	1955		
	Males	Females	Totals
Under 24 hours	113	74	187
24 hours to 1 year	1,209	1,056	2,265
1 year to 5 years	1,122	1,023	2,145
5 years to 15 years	433	347	780
15 years to 25 years	443	431	874
25 years to 45 years	1,616	909	2,525
45 years to 65 years	933	401	1,343
65 years and over	754	766	1,520

TABLE VIII

INVALIDINGS EUROPEAN OFFICIALS 1955

No.	Cause of Invaliding	No. of Cases
1.	Acute malaria (M.T.) and mild thrombophlebitis left leg	1
2.	Coronary thrombosis	1
3.	Tinea pedis	1
4.	Anxiety state	1
5.	Pulmonary tuberculosis	1
6.	Haematemesis associated with an active ulcer	1
7.	Acute poliomyelitis with paralysis	1
8.	Consolidation of the base of the right lung (aetiology unknown)	1
9.	Neurasthenia	1
10.	Psychoneurotic depression	1

TABLE IX

CAUSES OF INVALIDING OF EUROPEAN OFFICIALS—1951–55

Intermediate List Number	Cause of Invaliding	Number of Cases				
		1951	1952	1953	1954	1955
A.1	Tuberculosis of respiratory system	1	1	—	1	1
A.4	T.B. of bones and joints	—	1	—	—	—
A.12	Typhoid fever	2	—	—	—	—
A.16(*b*)	Amoebiasis	1	—	—	—	—
A.26	Tetanus	—	1	—	—	—
A.28	Acute poliomyelitis	—	—	—	—	1
A.30	Late effect of acute poliomyelitis and acute infectious encephalitis	—	—	—	3	—
A.34	Infectious hepatitis	—	—	—	1	—
A.37(*e*)	Other and unspecified forms of malaria	—	1	1	—	1
A.40(*a*)	Onchocerciasis	—	1	—	—	—
A.44	Malignant neoplasm of buccal cavity and pharynx	—	1	—	—	—
A.48	Malignant neoplasm of rectum	—	—	1	—	—
A.60	Benign neoplasms and neoplasms of unspecified nature	1	—	—	—	—
A.62	Thyrotoxicosis with or without goitre	—	—	—	—	—
A.65(*c*)	Other specified and unspecified anaemias	1	1	—	—	—
A.66(*b*)	Other allergic disorders, endocrine, metabolic and blood diseases	—	—	—	—	—
A.67	Psychoses	1	1	—	2	—
A.68	Psychoneuroses and disorder of personality	6	4	7	3	2
A.77(*c*)	Other inflammatory diseases of the ear	—	—	1	—	—
A.78(*a*)	All other diseases and conditions of the eye	—	2	—	1	—
A.78(*b*)	All other disease of the nervous system and sense organs	—	1	—	1	1
A.81	Arteriosclerotic and degenerative heart disease	—	—	—	—	—
A.83	Hypertension with heart disease	—	1	—	—	—
A.86	Other diseases of the circulatory system	—	—	—	—	1
A.88	Influenza	—	—	1	—	—
A.91	Primary atypical, other and unspecified pneumonia	—	—	—	1	1
A.93	Bronchitis, chronic and unqualified	1	—	—	—	—
A.95	Empyema and abscess of lung	—	1	—	—	—
A.96	Pleurisy	—	—	—	—	—
A.97(*b*)	All other respiratory diseases	—	—	1	—	—
A.99	Ulcer of stomach	—	—	1	1	1
A.100	Ulcer of duodenum	—	—	—	—	—
A.102	Appendicitis	—	1	1	—	—
A.106	Cholelithiasis and cholecystitis	—	1	—	—	—
A.107	Other diseases of digestive system	1	1	—	—	—
A.114(*c*)	All other diseases of the genito-urinary system	—	2	—	—	—
A.121	Infections of skin and subcutaneous tissue	—	—	1	—	1
A.122	Arthritis and spondylitis	—	—	2	—	—

TABLE X

INVALIDINGS AFRICAN OFFICIALS—1955

No.	Cause of Invaliding	No. of Cases
1	Chronic pleurisy	1
2	Hypertensive heart disease	1
3	Mental illness	16
4	Chronic synovitis	1
5	Onchocerciasis	1
6	Chronic prolapsed piles	1
7	Pulmonary tuberculosis	7
8	Fracture of the left femur	1
9	Cerebral trypanosomiasis	1
10	Cataract	3
11	Blind in the right eye	1
12	Chronic myocarditis and nephritis	1
13	Amputation at left knee	1
14	Stiff back and double vision	1
15	Ankylosis right elbow	1
16	Essential hypertension	1
17	Idiopathic epilepsy	1
18	Amputation above the wrist	1
19	Persistent headaches	1
20	Anaemia and general debility	1
21	Glaucoma	2
22	Contracture of the 4th and 3rd fingers left hand	1
23	Optic atrophy	3
24	Carcinoma of the maxilla	1
25	Chronic malaria	1
26	Old age	2
27	Chronic bronchitis and anaemia	1
28	Aortitis	1
29	Bilharziasis	1

TABLE XI

CLASSIFIED CAUSES OF INVALIDING OF AFRICAN OFFICIALS—1951–55

Intermediate List Number	Diseases	1951	1952	1953	1954	1955
A.1	Tuberculosis of respiratory system	6	14	11	4	7
A.10	All other syphilis	3	1	—	2	—
A.11	Gonococcal infections	—	1	—	—	—
A.16(*b*)	Amoebiasis	—	—	1	—	—
A.23	Meningococcal infections	1	—	—	—	—
A.37(*e*)	Other and unspecified malaria	1	—	—	1	1
A.43	Yaws	—	—	1	—	—
A.43(*m*)	Trypanosomiasis	—	—	1	—	1
A.44	Malignant neoplasm of buccal cavity and pharynx ...	—	—	—	—	—
A.57	Malignant neoplasm of all other unspecified sites ...	1	—	1	1	1
A.59	Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	—	—	—	1	—
A.60	Benign neoplasms and neoplasms of unspecified nature	1	—	—	1	—
A.63	Diabetes mellitus	1	—	1	—	—
A.65(*b*)	Iron deficiency anaemias (hypochromic)	1	—	—	—	—
A.65(*c*)	Other specified and unspecified anaemias	—	—	—	—	1
A.66	Asthma	1	2	1	—	—
A.67	Psychoses	2	—	7	3	—
A.68	Psychoneuroses and disorders of personality	3	4	7	4	16
A.70	Vascular lesions affecting central nervous system ...	—	—	3	4	—
A.75	Epilepsy	—	—	1	—	1
A.75	Cataract	—	1	1	1	3
A.76	Glaucoma	—	2	—	1	2
A.77(*b*)	Otitis media and mastoiditis	—	—	—	—	—
A.78(*a*)	All other diseases and conditions of eye	2	3	6	5	5
A.78(*b*)	All other diseases of the nervous system	1	—	1	—	—
A.81	Arteriosclerotic and degenerative heart disease ...	2	2	8	1	—
A.82	Other diseases of heart	—	—	—	1	1
A.83	Hypertension with heart disease	1	3	4	—	1
A.84	Hypertension without mention of heart	2	8	1	4	1
A.85	Diseases of arteries	—	—	—	1	1
A.93	Bronchitis, chronic and unqualified	—	—	—	1	1
A.95	Empyema and abscess of lung	—	—	—	1	—
A.97(*b*)	All other respiratory diseases	2	1	—	1	1
A.99	Ulcer of stomach	—	1	—	1	—
A.103	Intestinal obstruction and hernia	1	—	—	—	—
A.105	Cirrhosis of liver	—	2	—	1	—
A.106	Cholelithiasis and cholecystitis	—	1	—	—	—
A.107	Other diseases of digestive system	—	1	—	—	1
A.110	Infection of kidney	—	—	1	—	—
A.122	Arthritis and spondylitis	2	2	5	—	1
A.126(*b*)	All other diseases of skin	—	—	1	—	1
A.126(*c*)	All other diseases of musculo-skeletal system	1	3	—	3	2
A.136	Senility without mention of psychosis	1	1	—	—	2
A.137(*c*)	All other ill-defined causes of morbidity	—	1	—	1	1
AE.147(*e*)	All other accidental causes	2	—	3	1	3
AN.138	Fracture of skull	—	—	1	—	—
AN.139	Fracture of spine and trunk	—	—	1	—	—
AN.140	Fracture of limb	1	—	1	1	1
AN.148	Burns	1	—	—	—	—
	Total	40	54	69	46	56

TABLE XII

TWELVE PRINCIPAL CAUSES OF MORTALITY IN THE GOLD COAST, 1955

Serial No.	Intermediate List No.	Diseases	Number of Deaths
1	A.37(*e*)	Other and unspecified forms of malaria	222
2	A.120	Other complications of pregnancy, childbirth and the puerperium	220
3	AE.138	Motor vehicle accidents	131
4	A.89	Lobar pneumonia	130
5	A.26	Tetanus	130
6	A.90	Broncho pneumonia	102
7	A.103	Intestinal obstruction and hernia	96
8	A.1	T.B. of respiratory system	85
9	A.37(*c*)	Falciparum malaria (malignant tertian)	84
10	AE.139	Other transport accidents	65
11	AN.150	All other and unspecified effects of external causes ...	65
12	A.104(*a*)	Gastro-enteritis and colitis between 4 weeks and 2 years ...	64

TABLE XIII

DEATHS IN EUROPEAN NON-OFFICIALS

Serial No.	Cause of Death	Adults	Children
1	Cerebral haemorrhage	2	—
2	Heart failure	—	4
3	Gastro enteritis	—	4
4	Perforated gastric ulcer	2	—
5	Asphyxia	1	—
6	Malaria	1	—
7	Broncho-pneumonia	1	—
8	Prematurity	—	1
9	Fracture of the skull	1	—
10	Asphyxia due to inhaled foreign body	—	1
11	Exhaustion	1	—
12	Atelectasis of lungs	—	1
13	Coronary thrombosis	1	—
14	Congenital malformation	—	1
15	Fracture of skull	1	—
16	Cerebral malaria	—	1
17	Congenital heart disease	—	3
18	Poliomyelitis	1	—
19	Injuries received in motor accident	3	—
20	Drowning	—	1
21	Inhalation of vomitus	1	—
22	Mesenteric thrombosis	1	—

TABLE XIV

DEATHS—AFRICAN OFFICIALS—1955

Serial	Diseases	Number
1	Gastric ulcer and carcinoma of stomach	1
2	Tetanus (post operative)	1
3	Tetanus	2
4	Cerebral haemorrhage and hypertension	1
5	Pulmonary embolism	1
6	Chronic nephritis, hypertension and uraemia	1
7	High blood pressure	1
8	Jaundice	1
9	Pulmonary tuberculosis	2
10	Lobar pneumonia	1
11	Congestive heart failure	1
12	Heart attack	1
13	Hepatitis	1
14	Cerebral haemorrhage	3
15	Malignant hypertension with cardiac failure	1
16	Peritonitis	1
17	Broken neck	1
18	Injuries of spinal column	1
19	Cirrhosis of liver	1
20	Pleurisy and pneumonia	1
21	Unidentified poison administered orally	1

TABLE XV

CLASSIFIED CAUSES OF DEATH OF AFRICAN OFFICIALS—1950–55

Intermediate List Number	Diseases	1951	1952	1953	1954	1955
A.1	Tuberculosis of respiratory system	—	3	3	1	2
A.12	Typhoid fever	—	2	—	1	—
A.13	Paratyphoid fever and other salmonella infections ...	—	—	1	—	—
A.16(*b*)	Amoebiasis	1	—	—	—	—
A.20	Septicaemia and pyaemia	—	—	3	—	—
A.26	Tetanus	2	1	2	—	3
A.29	Acute infectious encephalitis	—	—	2	—	—
A.33	Yellow fever	1	1	—	—	—
A.37(*c*)	Falciparum malaria (malignant tertian)	—	—	1	—	—
A.37(*d*)	Blackwater fever	—	—	—	1	—
A.37(*e*)	Other and unspecified malaria	—	—	1	—	—
A.43(*m*)	Trypanosomiasis	—	—	2	—	—
A.45	Malignant neoplasm of oesophagus	—	—	1	—	—
A.47	Malignant neoplasm of intestines except rectum ...	—	—	—	1	1
A.57	Malignant neoplasm of all other and unspecified sites	—	—	1	2	—
A.63	Diabetes mellitus	1	—	1	—	—
A.64(*d*)	Other deficiency states	—	—	—	—	—
A.65(*b*)	Iron deficiency anaemias (hypochromic)	—	1	—	—	—
A.65(*c*)	Other specified and unspecified anaemias	—	1	—	—	—
A.66	Asthma	—	1	—	—	—
A.66(*b*)	All other allergic disorders, endocrine, metabolic and blood disease	—	—	—	1	—
A.70	Vascular lesions affecting central nervous system ...	1	4	4	3	4
A.71	Nonmeningococcal meningitis	—	—	1	—	—
A 81	Arteriosclerotic and degenerative heart disease ...	3	2	1	—	3
A.83	Hypertension with heart disease	—	—	1	1	1
A.84	Hypertension without mention of heart	2	—	—	1	2
A.89	Lobar pneumonia	—	1	—	—	1
A.91	Primary, atypical, other and unspecified pneumonia	—	—	1	—	—
A.96	Pleurisy	—	—	1	—	1
A.97(*b*)	All other respiratory diseases	—	—	1	—	—
A.102	Appendicitis	—	—	1	—	—
A.103	Instestinal obstruction and hernia	1	—	—	—	—
A.105	Cirrhosis of liver	—	—	1	—	1
A.107	Other diseases of digestive system	1	—	—	3	3
A.109	Chronic, other and unspecified nephritis	—	2	1	1	—
A.112	Hyperplasia of prostate	—	—	—	—	—
A.114(*c*)	All other diseases of genito-urinary system	—	—	1	1	—
A.120(*a*)	Other complications of pregnancy, childbirth and puerperium	—	1	—	—	—
AE.138	Motor vehicle accidents	—	3	—	—	—
AE.140	Accidental poisoning	—	—	—	—	1
AE.147(*c*)	All other accidental causes	—	—	2	1	2
AE.148	Suicide and self inflicted injury	—	—	—	1	—
	Total	13	23	34	19	25

TABLE XV (a)

ANALYSIS OF DEATHS DUE TO ACCIDENTS

Intermediate List Number	Diseases	1951	1952	1953	1954	1955
AN.138	Fracture of skull	—	—	1	—	—
AN.140	Fracture of limbs	—	—	—	1	—
AN.144	Internal injury of chest, abdomen and pelvis	—	2	1	1	—
AN.149	Effect of poisons	—	1	—	—	1
AN.150	All other and unspecified effects of external causes ...	—	—	—	—	2
	Total	—	3	2	2	3

TABLE XVI

RETURN OF NOTIFIABLE INFECTIOUS DISEASES, 1955

Diseases	Cases	Deaths
Yellow fever	7	6
Cerebrospinal meningitis	48	15
Smallpox	7	—
Relapsing fever	94	5
Acute poliomyelitis	48	2
Enteric fever	13	1
Typhus fever (louse-borne)	5	1

TABLE XVII

PRINCIPAL CAUSES OF MORBIDITY, 1955

Serial No.	Intermediate List No.	Disease or condition	Number of Cases
1	A.37(*c*)	Other and unspecified forms of malaria	3,658
2	A.120(*a*)	Other complications of pregnancy, childbirth and puerperium ...	2,945
3	AE.138	Motor vehicle accidents	2,650
4	A.118	Abortion without mention of sepsis or toxaemia	1,658
5	A.126(*a*)	Chronic ulcer of skin (including tropical ulcer)	1,572
6	A.103	Intestinal obstruction and hernia	1,544
7	AN.144(*c*)	All other diseases of the genito urinary system	1,443
8	AN.145	Laceration and open wounds	1,253
9	A.89	Lobar pneumonia	1,162
10	AE.147(*c*)	Accidents caused by bites and stings of venomous animals and insects	1,128
11	AN.146	Superficial injury, contusion and crushing with intact skin surface	977
12	AN.140	Fracture of spine and trunk	963
13	A.121	Infections of skin and subcutaneous tissue	917
14	A.137(*a*)	Pyrexia of unknown origin	847
15	A.107	Other diseases of digestive system	820

APPENDIX "D" (TO CHAPTER III)

TABLE XVIII

ANALYSIS OF HOSPITAL IN-PATIENT RETURN BY REGIONS, 1953–55

Region	1953			1954			1955		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Accra Region	4,363	3,786	8,149	4,094	5,920	10,014	4,557	6,923	11,480
Eastern Region	2,397	2,524	4,921	3,125	2,883	6,008	4,427	4,320	8,747
Trans-Volta Togoland Region	2,186	2,007	4,193	1,733	1,807	3,540	2,044	2,430	4,474
Western Region	9,302	6,516	15,818	7,287	5,696	12,983	8,631	6,641	15,272
Ashanti	5,960	5,713	11,673	4,287	5,351	9,638	3,834	5,431	9,265
Northern Territories ...	5,681	3,258	8,939	3,231	2,204	5,435	3,798	2,653	6,451
Total	29,889	23,804	53,693	23,757	23,861	47,618	27,291	28,398	55,689

TABLE XIX

HOSPITAL BEDS AVAILABLE IN GOVERNMENT HOSPITALS 1950 AND 55

Region	Male Beds		Female Beds		Cots		Isolation Beds	
	1950	1955	1950	1955	1950	1955	1950	1955
Accra Region	226	339	168	192	106	142	8	8
Trans-Volta Togoland Region ...	47	61	47	65	15	28	—	—
Eastern Region	88	125	62	95	29	42	—	8
Western Region	289	283	156	191	58	110	—	—
Ashanti	159	169	99	177	74	101	—	—
Northern Territories	147	158	74	95	20	49	12	12
Total	956	1,135	606	815	302	472	20	28

TABLE XX

HOSPITAL BEDS AVAILABLE FOR HIGHER SOCIAL GRADES 1950 AND 55

	Males		Females		Cots		Isolation	
	1950	1955	1950	1955	1950	1955	1950	1955
Ridge Hospital, Accra	18	18	15	18	1	6	0	2
Takoradi Hospital, Takoradi	29	33	9	12	2	4	0	0
Kumasi Central Hospital	8	12	8	13	4	4	0	0
Tamale West Hospital	4	4	4	4	—	2	0	0
Total	59	67	36	47	7	16	0	2

APPENDIX "E" (TO CHAPTER IV)

TABLE XXI

TOTAL ANNUAL RECURRENT EXPENDITURE OF MEDICAL DEPARTMENT COMPARED WITH TOTAL ANNUAL RECURRENT GOVERNMENT EXPENDITURE

1946–55

Year	Government Expenditure		Medical Department Expenditure		Medical Department as percentage of total Government Expenditure
	Ordinary	Extraordinary	Ordinary	Extraordinary	
	£	£	£	£	£
1946	4,781,070	716,098	501,347	18,347	10·5
1947	7,956,115	1,036,729	572,328	24,023	6·6
1948	8,431,630	1,208,058	750,337	5,093	7·8
1949	9,861,715	1,376,215	867,886	22,492	7·9
1950	10,902,214	3,110,391	936,927	28,093	6·9
1951	30,383,419	2,520,604	1,027,166	10,628	3·15
1952	36,121,713	1,008,756	1,585,219	22,325	4·2
1953	40,816,020	2,620,472	1,801,596	17,001	4·2
1954	42,203,015	1,483,914	1,844,322	59,971	4·36
1955	46,535,371	2,286,636	2,300,812	44,874	4·8

APPENDIX "F" (TO CHAPTER VI)

TABLE XXII

CAUSES OF DEATH IN 604 POST MORTEM EXAMINATIONS ACCRA

Newborn		30
Diseases of the cardiovascular system		45
Diseases of the Respiratory system		74
Carcinoma of lung	1	
Chronic fibrosis	1	
Pneumonia (including lung abscess, etc.)	47	
Tuberculosis	25	
Diseases of the Central nervous system		41
Abscess of brain	3	
Cerebral malaria	5	
Cyst	1	
Encephalitis	9	
Encephalomyelitis	1	
Hydrocephalus	2	
Meningitis (tubercle 1, pneumococcal 7, unclassified 6, influenzal 1, staphylococcal 1)	16	
Pituitary adenoma	1	
Poliomyelitis	1	
Rabies	2	
Diseases of the Genito Urinary system		24
Carcinoma (bladder 1, ovary 3)	4	
Nephritis (all types)	9	
Pyelonephritis	10	
Sarcoma of kidney	1	
Diseases of the liver		30
Diseases of the Gastro-intestinal tract		29
Duodenal ulcer	3	
Others	16	
Pacreatitis	3	
Perforation of small intestine (ileum)	4	
Strangulated hernia	1	
Volvulus	2	
Infectious and parasitic diseases		55
Amoebiasis	10	
Anthrax	1	
Diphtheria	1	
Pyaemia and septicaemia	34	
Tetanus	4	
Typhoid fever	5	
Miscellaneous Diseases		99
Complications of child birth	15	
Kwashiorkor	14	
Malnutrition	10	
Others	11	
Reticuloses	6	
*Sickle cell disease	12	
Undetermined	31	
Unnatural causes		177
Total		604

---

*A number of necropsies in which the cause of death was thought to be sickle-cell disease showed the presence of the trait on paper electrophoresis.

APPENDIX "G" (TO CHAPTER XIV)

TABLE XXIII

COMPLICATIONS OF PREGNANCY INCLUDING INTERCURRENT CONDITIONS, KUMASI

Condition	No. of Cases	No. of Maternal Deaths	No. of Foetal Deaths
Abortion, threatened	46	—	—
Abortion, incomplete	298	—	—
Abortion, complete	9	—	—
Abortion, septic	2	—	—
Ectopic pregnancy	25	1	1
False labour	7	—	—
Pre-eclamptic toxaemia	7	—	—
Hyperemesis gravidarum	4	—	—
Mastitis	1	—	—
Anaemia of pregnancy	38	—	—
Pyelitis	2	—	—
Hydatidiform mole	6	—	—
Fibromyomata	9	—	—
Ovarian cyst	5	—	—
Acute salpingitis	12	—	—
Others	497	—	—
Total	968	1	1

TABLE XXIV

NORMAL DELIVERIES DURING THE YEAR, KUMASI

Condition or Lie	No. of Cases	Maternal Deaths	Infant Deaths During Deliveries
Vertex	... 330	22	—
Breech	... 32	4	—
Face	... 4	—	—
Twins	... 22	—	—
Triplets	... 2	—	—

TABLE XXV

OBSTRUCTED OR COMPLICATED LABOURS WITH OPERATIVE DELIVERY, KUMASI

Condition or Lie	Number of cases	Maternal Deaths During Delivery	Infant Deaths During Delivery
Shoulder	3	—	—
Ruptured uterus	42	30	—
Intra-abdomal pregnancy	3	—	—
Others	75	—	—
Totals	123	30	—

TABLE XXVI

INTRA-PARTUM COMPLICATIONS, KUMASI

Condition	No. of Cases	No. of Infant Deaths During Delivery	No. of Maternal Deaths During Delivery
Placenta praevia	... 11	—	—
Eclampsia	... 14	—	—
Prolapse of cord	... 4	—	—
Retained twin	... 1	1	—
Concealed accidental haemorrhage ...	... 1	—	—
Others	... 224	—	—
Totals ...	... 255	1	—

TABLE XXVII

POST-PARTUM ADMISSIONS—KUMASI

Condition	No. of Cases	No. of Deaths During Year
Normal mothers with sick infants	7	—
Retained placenta	59	2
Post-partum haemorrhage	20	—
Secondary post-partum haemorrhage	38	—
Observation	6	—
Eclampsia	21	—
Delivery *en route* to hospital	1	—
Breast abscess	1	—
Anaemia	38	—
Prolapse of cervix	1	—
Others	21	—
Totals	213	2

TABLE XXVIII

NEONATAL CONDITIONS TREATED DURING THE YEAR—KUMASI

Condition	No. of Cases	No. of Deaths
Normal baby with sick mother	11	—
Prematurity	35	—
Intracranial haemorrhage	10	5
Dehydration	12	—
Totals	68	5

TABLE XXIX

DELIVERIES—ACCRA

Type of Pregnancy		Cases	Maternal Deaths
Normal delivery :	Single pregnancy	1,515	5
	Twin pregnancy	111	—
	Triplets	1	—
Caesarean section :	Singles	441	7
	Twins	17	1
	Triplets	—	—
Forceps:	Singles	131	3
	Twins	4	—
	Triplets	—	—
Breech extraction :	Singles	33	—
	Twins	11	—
	Triplets	1	—
Macerated delivery :	Singles	15	—
	Twins	—	—
	Triplets	—	—
Perforation and extraction :	Singles	19	—
	Twins	—	—
	Triplets	—	—

Appendix "H" (To Chapter XV)

TABLE XXX

NURSES IN TRAINING

A. STATE REGISTERED NURSES' QUALIFICATION (S.R.N.), 1955

(*A*) Pre-nursing Class

Number of middle school girls entering pre-nursing class	75
Number who left the pre-nursing class	33
(*a*) known to have taken up Q.R.N. training	12
(*b*) advised to take up Q.R.N. training	18
(*c*) absolute wastage	3

(*B*) Preliminary Nursing Class

Number who passed into this class	39
Number of secondary school girls who entered the class	6
Number who left the class	6
(*a*) known to have taken Q.R.N.	3
(*b*) absolute wastage	3

(*C*) Hospital Training Period

Number who commenced training during the year	45
Number who left on completion of training	32
Number who left to take Qualified Registration Training	9
Absolute wastage	2
Total Number of students at 31st December, 1955	155
Plus male nurses on concentrated course	8

B. QUALIFIED REGISTERED NURSES (Q.R.N.) 1955

Number in training at 1st January (Q.R.N. Trainees)	315
Number commenced hospital training	124
Total number in training	439
Number who ceased training	46
Number in training at 31st December	393

TABLE XXXI

ANALYSIS OF TRAINED NURSES AT 31st DECEMBER, 1955

A. Number on the establishment on 1st January, 1955 (all classes) including Health Visitors		883
Number qualifying during the year:—		
S.R.N.	32	107
Q.R.N.	62	
Q.R.M.N.	13	
Number who left the service during the year		69
Number at end of the year		921
Net gain of trained nurses		38
B. Number on establishment at end of the year		921
Mental Nurses		100
Health Visitors		12
Midwives		41
General nurses		768

TABLE XXXII

LOSS OF NURSING STAFF, 1955

	Retired	Resigned	Invalided	Dismissed	Died
Trained nurses (all classes)	8	43	8	8	2
Nurses in training (all classes)	—	32	1	13	—

APPENDIX J

CONSOLIDATED RETURN OF ALL HOSPITALS

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND DISEASES (OUT-PATIENTS) FOR THE YEAR 1955

Intermediate List Number	Diseases	IN-PATIENTS							OUT-PATIENTS	
		Remaining in hospital on 31st Dec., 1954	Yearly Total				Total cases treated	Remaining in hospital on 31st Dec., 1955	Males	Females
			Admissions		Deaths					
			Males	Females	Males	Females				
A.1	T.B. of respiratory system	130	455	294	59	26	879	120	873	296
A.2	T.B. of meninges and central nervous system	1	27	13	9	4	41	1	1	—
A.3	T.B. of intestines, peritoneum and mesenteric glands	1	14	23	3	3	38	3	11	1
A.4	T.B. of bones and joints	35	51	20	3	2	106	6	34	15
A.5	T.B. all other forms	6	83	42	7	5	131	1	55	22
A.6	Congenital syphilis	1	20	12	—	3	33	1	20	6
A.7	Early syphilis	1	36	17	—	—	54	2	225	36
A.8	Tabes dorsalis	—	—	—	—	—	—	—	1	—
A.9	General paralysis of insane	—	7	—	1	—	7	—	1	1
A.10	All other syphilis	1	49	21	2	1	71	5	444	143
A.11	Gonococcal infections	20	357	159	4	13	536	10	10,097	1,598
A.12	Typhoid fever	17	368	152	32	8	537	6	39	38
A.13	Paratyphoid fever and other salmonella infections	3	53	28	4	1	84	1	5	—
A.14	Cholera	—	—	—	—	—	—	—	—	—
A.15	Brucellosis (undulant fever)	—	21	9	2	2	30	—	—	—
A.16 (*a*)	Bacillary dysentery	14	245	231	26	6	490	19	614	372
(*b*)	Amoebiasis	3	185	146	12	6	334	14	361	163
(*c*)	Other unspecified forms of dysentery	8	181	155	7	11	344	16	1,349	1,119
A.17	Scarlet fever	—	—	—	—	—	—	—	36	26
A.18	Streptococcal sore throat	1	40	29	1	—	70	—	244	86
A.19	Erysipelas	—	7	6	—	—	13	—	10	3
A.20	Septicaemia and pyaemia	1	48	35	8	23	84	—	108	4
A.21	Diphtheria	—	—	2	—	—	2	—	23	14
A.22	Whooping cough	1	104	87	3	6	192	3	759	667
A.23	Meningococcal infections	8	77	59	19	26	144	4	24	13
A.24	Plague	—	—	—	—	—	—	—	—	—
A.25	Leprosy	1	8	7	—	—	16	2	607	546
A.26	Tetanus	7	213	139	80	50	359	6	25	60
A.27	Anthrax	1	6	3	—	—	10	—	3	1
A.28	Acute poliomyelitis	—	34	14	1	1	48	—	4	3
A.29	Acute infectious encephalitis	—	3	4	2	—	7	—	—	—
A.30	Late effect of acute poliomyelitis and acute infectious encephalitis	—	4	8	—	1	12	—	6	—
A.31	Smallpox	—	1	1	—	—	2	—	5	7
A.32	Measles	3	168	121	12	12	292	12	555	472
A.33	Yellow fever	—	3	—	1	—	3	—	—	—
A.34	Infectious hepatitis	2	155	117	22	8	274	19	359	188
A.35	Rabies	—	7	7	4	—	14	—	18	6
A.36 (*a*)	Louse-borne epidemic typhus	—	2	2	—	1	4	—	—	—
(*b*)	Flea-borne endemic typhus (murine)	1	—	—	—	1	1	—	—	—
(*c*)	Tick-borne epidemic typhus	—	1	—	—	—	1	—	—	—
(*d*)	Mite-borne typhus	—	—	—	—	—	—	—	—	—
(*e*)	Other and unspecified typhus	—	—	1	—	—	1	—	—	—
A.37 (*a*)	Vivax malaria (benign tertian)	5	354	201	—	—	560	—	640	435
(*b*)	Malariae malaria (quartan)	1	97	45	4	—	143	1	291	215
(*c*)	Falciparum malaria (malignant tertian)	20	813	637	41	43	1,470	16	8,043	5,095
(*d*)	Blackwater fever	1	18	10	4	3	29	—	9	5
(*e*)	Other and unspecified forms of malaria	64	2,174	1,484	110	112	3,722	44	31,905	18,077
A.38 (*a*)	Schistosomiasis vesical (s. haematobium)	7	209	78	5	3	294	3	1,537	633
(*b*)	Schistosomiasis intestinal (s. mansoni)	2	16	5	1	1	23	3	104	32
(*c*)	Schistosomiasis pulmonary (s. Japonicum)	—	—	—	—	—	—	—	—	—
(*d*)	Other and unspecified Schistosomiasis	—	34	19	1	1	53	2	239	114
A.39	Hydatid disease	—	7	2	3	—	9	—	27	158
A.40 (*a*)	Onchocerciasis	6	88	20	3	2	114	2	2	2
(*b*)	Loiasis	—	1	—	—	—	1	—	—	—
(*c*)	Filariasis (bancrofti)	1	27	6	—	—	34	2	15	4
(*d*)	Other filariasis	5	340	164	—	2	509	3	44	26
A.41	Ankylostomiasis	19	417	226	7	1	662	8	2,324	1,379
A.42 (*a*)	Tapeworm (infestation) and other cestode infestations	4	158	121	2	—	283	1	325	173
(*b*)	Ascariasis	8	392	268	15	8	668	7	4,198	3,694
(*c*)	Guinea worm (dracunculosis)	8	248	85	4	1	341	6	935	446
(*d*)	Other diseases due to helminths	1	89	75	—	—	165	1	767	494
A.43 (*a*)	Lymphogranuloma venereum	—	35	10	1	—	45	2	358	81
(*b*)	Granuloma inguinale, venereal	—	29	5	—	—	34	—	54	8
(*c*)	Other and unspecified venereal diseases	42	257	67	11	1	366	4	4,086	1,028
(*d*)	Food poisoning infection and intoxication	2	40	43	7	1	85	1	45	11

APPENDIX J—contd.

Intermediate List Number.	Diseases	IN-PATIENTS							OUT-PATIENTS	
		Remaining in hospital on 31st Dec., 1954	Yearly Total				Total cases treated	Remaining in hospital on 31st Dec., 1955	Males	Females
			Admissions		Deaths					
			Males	Females	Males	Females				
A.43 (*e*)	Relapsing fever	—	—	—	—	—	—	—	—	—
(*f*)	Leptospirosis icterohaemorrhagica (Weil's disease)	—	—	—	—	—	—	—	—	—
(*g*)	Yaws	2	79	24	1	—	105	—	17,591	7,766
(*h*)	Chickenpox	—	50	20	—	—	70	—	2,274	950
(*i*)	Dengue	—	20	18	—	—	38	1	242	95
(*j*)	Trachoma	4	18	80	—	—	102	—	70	5
(*k*)	Sandfly fever	—	1	2	—	—	3	—	83	41
(*l*)	Leishmaniasis	—	1	—	—	—	1	—	—	—
(*m*)	Trypanosomiasis gambiensis ...	11	77	27	17	6	115	13	62	35
	Trypanosomiasis rhodesiensis ...	—	—	—	—	—	—	—	—	—
	Other and unspecified trypanosomiasis	5	31	9	5	3	45	1	29	10
(*n*)	Dermatophytosis	—	24	11	—	—	35	—	686	611
(*o*)	Scabies	1	41	17	—	—	59	1	4,408	3,059
(*p*)	All other diseases classified as infective and parasitic ...	1	68	36	1	—	105	1	1,356	698
A.44	Malignant neoplasm of buccal cavity and pharynx	—	16	3	—	1	19	—	—	1
A.45	Malignant neoplasm of oesophagus	1	1	2	—	—	4	1	—	—
A.46	Malignant neoplasm of stomach	7	56	17	8	4	80	1	296	161
A.47	Malignant neoplasm of intestines except rectum ...	—	41	6	1	—	47	3	4	11
A.48	Malignant neoplasm of rectum	6	64	36	3	1	106	1	80	29
A.49	Malignant neoplasm of larynx	—	7	1	—	—	8	1	—	—
A.50	Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary ...	—	15	3	1	—	18	1	212	78
A.51	Malignant neoplasm of breast	3		14	—	—	18	1	1	23
A.52	Malignant neoplasm of cervix uteri	1	21	18	—	3	40	—	—	23
A.53	Malignant neoplasm of other and unspecified parts of uterus	4	—	132	6	11	136	5	4	215
A.54	Malignant neoplasm of prostate	—	28	—	—	—	28	—	9	—
A.55	Malignant neoplasm of skin ...	3	35	30	—	—	68	—	132	67
A.56	Malignant neoplasm of bone and connective tissue	1	8	9	—	—	18	—	4	5
A.57	Malignant neoplasm of all other and unspecified sites ...	3	68	56	7	3	127	3	42	29
A.58	Leukaemia and aleukaemia ...	—	20	8	2	—	28	—	—	1
A.59	Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	—	3	2	2	—	5	—	7	5
A.60	Benign neoplasms and neoplasms of unspecified nature ...	3	85	127	1	3	215	6	142	189
A.61	Non-toxic goitre	—	10	40	—	2	50	2	28	74
A.62	Thyrotoxicosis with or without goitre	2	2	2	1	—	6	1	5	44
A.63	Diabetes millitus	4	80	25	7	3	109	10	131	76
A.64(*a*)	Beriberi	1	11	—	2	—	12	—	74	3
(*b*)	Pellagra	—	9	2	—	—	11	—	46	47
(*c*)	Scurvy	—	3	2	5	—	5	—	23	22
(*d*)	Other deficiency states ...	6	185	143	20	22	334	19	2,186	1,201
(*e*)	Kwashiorkor	—	18	12	4	6	30	—	23	31
A.65(*a*)	Pernicious and other hyperchromic anaemias ...	4	60	68	5	5	132	9	16	11
(*b*)	Iron deficiency anaemias (hypochromic)	5	81	131	5	8	217	31	422	360
(*c*)	Other specified and unspecified anaemias	6	169	313	26	36	488	9	958	1,203
A.66(*a*)	Asthma	1	173	100	7	3	274	6	458	497
(*b*)	All other allergic disorders, endocrine, metabolic and blood diseases	11	308	70	15	7	384	19	375	185
A.67	Psychoses	1	33	26	1	2	60	2	34	38
A.68	Psychoneuroses and disorders of personality	1	48	33	—	1	82	2	104	16
A.69	Mental deficiency	—	23	4	2	—	27	—	32	9
A.70	Vascular lesions affecting central nervous system	4	60	15	7	3	79	5	161	25
A.71	Nonmeningococcal meningitis	2	39	22	10	8	63	—	11	2
A.72	Multiple sclerosis	—	—	—	—	—	—	—	5	4
A.73	Epilepsy	2	31	33	5	5	66	1	70	40
A.74	Inflammatory diseases of eye ...	3	134	86	—	—	223	3	5,820	3,108
A.75	Cataract	1	11	6	—	—	18	—	1,019	207
A.76	Glaucoma	—	25	1	—	—	26	—	425	91
A.77(*a*)	Otitis externa	2	39	22	—	—	63	1	746	553
(*b*)	Otitis media and mastoiditis ...	3	92	84	—	—	179	—	1,283	695
(*c*)	Other inflammatory diseases of the ear	—	36	28	—	—	64	2	3,214	929
A.78(*a*)	All other diseases and conditions of eye	7	192	79	—	—	278	2	3,353	1,465
(*b*)	All other diseasese of the nervous system and sense organs ...	7	167	95	10	3	269	4	770	232
A.79	Rheumatic fever	—	6	7	—	—	13	—	615	226
A.80	Chronic rheumatic heart disease	—	35	10	4	1	45	—	28	26
A.81	Arteriosclerotic and degenerative heart disease	1	38	32	4	1	71	2	30	36

APPENDIX J—contd.

Intermediate List Number	Diseases	IN-PATIENTS							OUT-PATIENTS	
		Remaining in hospital on 31st Dec., 1954	Yearly Total				Total cases treated	Remaining in hospital on 31st Dec., 1955	Males	Females
			Admissions		Deaths					
			Males	Females	Males	Females				
A.82	Other diseases of heart ...	14	157	123	33	15	294	17	508	379
A.83	Hypertension with heart disease	4	108	66	14	8	178	7	112	86
A.84	Hypertension without mention of heart	6	101	75	18	3	182	—	370	173
A.85	Diseases of arteries	—	27	6	9	—	33	—	12	66
A.86	Other diseases of circulatory system	4	92	38	3	6	134	2	652	237
A.87	Acute upper respiratory infections	7	120	75	1	2	202	1	3,079	1,572
A.88	Influenza	—	18	11	—	—	29	2	109	153
A.89	Lobar pneumonia	23	774	388	85	45	1,185	29	601	357
A.90	Broncho-pneumonia	12	411	249	48	54	672	12	731	313
A.91	Primary atypical, other and unspecified pneumonia ...	19	343	184	30	13	546	6	592	238
A.92	Acute bronchitis	4	218	136	5	3	358	6	3,137	1,594
A.93	Bronchitis, chronic and unqualified	7	283	205	5	3	495	1	3,683	2,554
A.94	Hypertrophy of tonsils and adenoids	1	89	56	—	1	146	—	558	295
A.95	Empyema and abscess of lung	1	22	18	2	10	41	—	3	30
A.96	Pleurisy	—	108	53	6	3	161	2	163	146
A.97(*a*)	Pneumoconiosis	1	57	37	5	3	95	2	97	7
(*b*)	All other respiratory diseases ...	1	85	58	5	2	144	9	3,180	1,883
A.98(*a*)	Dental caries	3	57	31	—	—	91	1	7,172	2,707
(*b*)	All other diseases of teeth and supporting structures ...	3	61	40	1	—	104	—	721	683
A.99	Ulcer of stomach	3	46	18	5	3	67	5	27	11
A.100	Ulcer of duodenum	—	40	19	7	4	59	4	7	1
A.101	Gastritis and duodenitis ...	—	79	54	3	—	133	—	1,094	775
A.102	Appendicitis	5	126	56	7	4	187	5	35	42
A.103	Intstinal obstruction and hernia	42	1,391	153	78	18	1,586	38	894	63
A.104(*a*)	Gastro-enteritis and colitis between 4 weeks and 2 years	4	356	202	32	32	562	11	1,409	869
(*b*)	Gastro-enteritis and colitis, ages 2 years and over ...	1	250	184	11	10	435	4	2,210	1,382
(*c*)	Chronic enteritis and ulcerative colitis	1	83	48	4	2	132	—	288	275
A.105	Cirrhosis of liver	5	115	42	23	8	162	7	68	32
A.106	Cholelithiasis and cholecystitis	—	19	25	2	1	44	1	136	88
A.107	Other diseases of digestive system	14	486	334	20	19	834	12	5,447	2,638
A.108	Acute nephritis	4	85	41	7	7	130	6	123	68
A.109	Chronic, other and unspecified nephritis	7	144	100	14	7	251	7	150	103
A.110	Infections of kidney	1	47	22	6	1	70	3	249	72
A.111	Calculi of urinary system ...	—	25	1	—	—	26	1	41	50
A.112	Hyperplasia of prostate ...	4	81	19	1	—	104	6	85	—
A.113	Diseases of Breast	1	—	113	—	—	114	2	7	892
A.114(*a*)	Hydrocele	10	268	1	1	—	279	5	365	60
(*b*)	Disorders of menstruation ...	6	—	519	—	—	525	10	—	3,008
(*c*)	All other diseases of the genito-urinary system	47	654	789	22	3	1,490	27	3,334	1,766
A.115	Sepsis of pregnancy, childbirth and the puerperium	2	—	216	—	7	218	8	—	1,026
A.116	Toxaemias of pregnancy and the puerperium	3	—	160	—	18	163	3	—	91
A.117	Haemorrhage of pregnancy and childbirth	5	—	548	—	21	553	5	—	115
A.118	Abortion without mention of sepsis or toxaemia	10	—	1,658	—	2	1,668	10	—	590
A.119	Abortion with sepsis	3	—	184	—	—	187	9	—	81
A.120(*a*)	Other complications of pregnancy, childbirth and the puerperium	69	—	2,945	—	220	3,014	59	—	2,025
(*b*)	Delivery without complications	49	—	4,621	—	4	4,670	49	—	427
A.121	Infections of skin and subcutaneous tissue	21	687	230	11	6	938	19	5,337	3,183
A.122	Arthritis and spondylitis ...	6	255	99	2	1	360	15	1,990	715
A.123	Muscular rheumatism and rheumatism unspecified	6	169	64	1	—	239	6	3,889	1,501
A.124	Osteomyelitis and periostitis ...	20	174	82	3	1	276	13	235	114
A.125	Ankylosis and acquired musculoskeletal deformities	—	27	5	—	—	32	—	762	10
A.126(*a*)	Chronic ulcer of skin (including tropical ulcer)	79	1,164	408	7	2	1,651	40	13,460	10,186
(*b*)	All other diseases of skin ...	16	505	204	1	3	725	19	5,674	3,076
(*c*)	All other diseases of musculo-skeletal system	8	401	217	6	5	626	18	2,287	896
A.127	Spina bifida and meningocele ...	—	4	4	—	—	8	—	4	4
A.128	Congenital malformations of circulatory system	2	18	15	2	2	35	—	2	3
A.129	All other congenital malformations	—	38	30	1	2	68	2	41	29
A.130	Birth injuries	—	1	29	—	2	30	—	4	15
A.131	Postnatal asphyxia and atelectasis	—	71	73	17	6	144	—	63	14

APPENDIX J—contd.

Intermediate List Number	Diseases	IN-PATIENTS							OUT-PATIENTS	
		Remaining in hospital on 31st Dec., 1954	Yearly Total				Total cases treated	Remaining in hospital on 31st Dec., 1955	Males	Females
			Admissions		Deaths					
			Males	Females	Males	Females				
A.132(*a*)	Diarrhoea of newborn (under 4 weeks)	4	74	41	10	7	119	3	285	245
(*b*)	Ophthalmia neonatorum ...	—	24	23	—	—	47	2	293	113
(*c*)	Other infections of newborn ...	2	21	35	8	6	58	—	177	181
A.133	Haemolytic disease of newborn	—	12	4	2	2	16	1	7	14
A.134	All other defined diseases of early infancy	8	82	82	13	5	172	2	414	321
A.135	Ill-defined diseases peculiar to early infancy, and immaturity unqualified	12	91	92	16	18	195	—	481	477
A.136	Senility without mention of psychosis	1	20	12	7	1	33	—	114	68
A.137(*a*)	Pyrexia of unknown origin ...	14	400	447	17	15	861	15	2,496	1,371
(*b*)	Observation without need for further medical care ...	1	299	300	1	—	600	2	20,792	9,990
(*c*)	All other ill-defined causes of morbidity	16	305	239	11	15	560	12	11,330	3,598
	Total ...	1,215	24,130	25,390	1,387	1,211	50,741	1,090	234,649	129,726

Intermediate List Number	Accidents, Poisonings and Violence (External cause)	IN-PATIENTS							OUT-PATIENTS	
		Remaining in hospital on 31st Dec., 1954	Yearly Total				Total cases treated	Remaining in hospital on 31st Dec., 1955	Males	Females
			Admissions		Deaths					
			Males	Females	Males	Females				
AE.138	Motor vehicle accidents ...	80	1,867	783	86	45	2,730	65	10,909	4,494
AE.139	Other transport accidents ...	23	358	127	60	5	508	24	3,398	706
AE.140	Accidental poisoning	4	115	39	23	2	158	—	199	147
AE.141	Accidental falls	28	597	181	32	2	806	8	6,866	2,999
AE.142	Accidents caused by machinery	9	287	32	4	—	328	5	640	56
AE.143	Accidents caused by fire and explosion of combustible material	23	151	66	14	9	240	6	435	187
AE.144	Accidents caused by hot substance, corrosive liquid, steam and radiation ...	6	195	160	11	3	361	8	1,485	318
AE.145	Accident caused by firearm ...	9	252	23	17	—	284	8	175	11
AE.146	Accidental drowning and submersion	—	25	11	2	1	36	1	822	4
AE.147										
(*a*)	Foreign body entering eye and adnexa	2	57	36	—	—	95	1	340	248
(*b*)	Foreign body entering other orifice	3	154	77	1	—	234	—	685	321
(*c*)	Accidents caused by bites and stings of venomous animals and insects	12	387	179	7	4	578	5	1,234	787
(*d*)	Other accidents caused by animals	13	75	30	1	2	118	3	206	95
(*e*)	All other accidental causes ...	81	796	332	16	17	1,209	22	8,950	4,033
AE.148	Suicide and self-inflicted injury	—	108	15	1	—	123	—	38	616
AE.149	Homicide and injury purposely inflicted by other persons (not in war	3	219	148	11	—	370	10	2,744	1,597
AE.150	Injury resulting from operations of war	—	3	—	—	—	3	—	1	—
	Total ...	296	5,646	2,239	286	90	8,181	166	39,127	16,619

APPENDIX J—contd.

Intermediate List Number.	Accidents, Poisoning and Violence (Nature of injury	IN-PATIENTS							OUT-PATIENTS	
		Remaining in hospital on 31st Dec., 1954	YEARLY TOTAL				Total cases treated	Remaining in hospital on 31st Dec., 1955	Males	Females
			Admissions		Deaths					
			Males	Females	Males	Females				
AN.138	Fracture of skull	4	100	43	35	15	147	4	23	12
AN.139	Fracture of spine and trunk ...	2	126	25	30	7	153	9	225	95
AN.140	Fracture of limbs	126	718	245	16	3	1,089	15	929	243
AN.141	Dislocation without fracture ...	7	274	65	1	—	346	4	418	208
AN.142	Sprains and strains of joints and adjacent muscle ...	4	263	115	—	1	382	2	2,943	767
AN.143	Head injury (excluding skull fracture)	12	266	93	19	6	371	5	614	193
AN.144	Internal injury of chest, abdomen, and pelvis	3	134	46	43	7	183	8	85	27
AN.145	Laceration and open wounds ...	127	863	390	33	14	1,380	11	7,276	5,425
AN.146	Superficial injury, contusion and crushing with intact skin surface	4	735	242	1	1	981	6	10,839	7,164
AN.147	Effects of foreign body entering through orifice	2	97	69	14	—	168	7	1,075	178
AN.148	Burns	1	312	192	49	12	505	9	596	332
AN.149	Effects of poisons	2	233	72	9	5	307	2	540	174
AN.150	All other and unspecified effects of external causes	2	1,525	642	36	19	2,169	84	13,564	1,901
	Total ...	296	5,646	2,239	286	90	8,181	166	39,127	16,619
	GRAND TOTAL ...	1,511	29,776	27,629	1,673	1,301	58,922	1,256	273,776	146,347

GP/W965/650/12-57

BUREAU OF HYGIENE & TROPICAL DISEASES
13 MAR [illegible]